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Current Comment.

A SUBSCRIBER asks the following questions: "Can we produce as good quality of wool in the United States as in Europe?" and "Is it necessary to import fine wool?" The answers to your questions are contained in the following extracts from a recent letter on the possibilities of wool growing in the United States, by Secretary Rusk, of the Department of Agriculture, which was written to refute the opinion advanced by some that our country lacks soils and climate necessary for the production of certain kinds and qualities of wool used in manufacture:

This country possesses a marvelous range of climatic conditions, having 24° of latitude, between 25° and 49° with altitudes compassing levels from the semi-tropical to those of perpetual snow, and ocean currents modifying the climates of both coasts. Its soil ranges from those of geological formations of the early geologic ages to the alluvium of the present day. A continent so broad, so varied in soil and climate, is properly designated as the western world, and the United States compasses all its possibilities except those of strictly tropical and absolutely polar areas. It can, therefore, produce, with no limitations of practical importance, all the races and breeds of sheep in the world. The families of the Merino race, originating in Spain, all thrive in this country and include a large proportion of existing flocks. All the nation breeds of Great Britain, the breeds producing medium and long wool, flourish here, and are to be found scattered through the regions in which sheep husbandry is fostered almost exclusively for its wool production. The coarse wool type is also represented by the Spanish varieties which went first to Mexico and thence to all our southern domain, and formed the foundation to most of the flocks in all the territory of the arid region beyond the Missouri. There have also been importations of Asiatic and African sheep in the South. We actually possess the flocks and produce the wools of three groups in the customs wool classification; namely, the carding, the combing, and the carpet wools. The supply of each class, it is true, is not equally proportioned to the manufacturing demand, for very obvious reasons, which have nothing to do with soil or climate or impossibility of adaptation to the physical conditions prevailing on the western continent.

Our manufactures of wool have had a natural development. Two generations ago the domestic manufacture was very generously distributed through the districts then settled. The rise of the factory system destroyed the hand manufacture of wool throughout the world. The development of manufacture by machinery was slow, beginning with coarse fabrics. For many years the carding processes

only were in vogue. A single generation ago there was little combing or worsted manufacture, and fine cassimeres were unknown. Few carpets were then made here. Both industries have since had remarkable development, nearly supplying the home demand, and no demand for foreign carpets exists except to supply the fancies and whims of the fastidious who want a particular pattern or a foreign name. Our patented machinery is now sought abroad with which to manufacture the supplies of other countries. Thus our progress in manufacturing, apparently slow, and by steps from lower to higher forms, has been really rapid, and every stage of progress has created demand for greater variety of wool, which there was before no inducement to produce. The Saxon Merinos, for instance, bearing the finest wool in the world, were imported and bred when our manufacturers were pressed to supply the requirements of the country for cloths of medium fine wools, and were not yet ready to produce fine broadcloths, and therefore could not offer prices that would foster increased supply of that grade. But there is no climatic difficulty in their production.

As to carpet wools, the principal reason why they have not been produced in sufficient quantities is because they have been discriminated against in tariff rates. For instance, the imports of clothing wools in 1888-89 paid an average duty of 49.05 per cent, worsted wools a duty of 42.5 per cent, and carpet wools a duty of only 26.16 per cent. The average duty per pound was 10.55 cents for clothing wools, 10.09 for worsted and 3.18 for carpet wools. This is not all of the discrimination. The classification which includes in the third class all wools except English and Merino, is a drag net for all other wools of the world, covering a range of quality and style wide enough for a very extensive variety of manufactures. Besides, there is admitted in this class a valuable line of incidental or so-called waste products of manufacture, worth very much more per pound in its cleansed state than the imports of clothing wool. Naturally, under these discriminations, the carpet wools constitute 77 per cent of all imports. Thus the third class is a loop-hole for the admission of a great variety of wool, through which the barriers for the protection of wool growers are practically broken down.

UNDER "Current Comment" in FARM AND FIRESIDE for September 15, 1888, is an article that was written in answer to a letter from a subscriber in western Pennsylvania, describing a new fruit scheme in operation there. Briefly, the scheme was this: An agent, representing a New York nursery, agreed to furnish fruit trees and vines, and contracted to take the fruit grown from them for five or ten years. He sold the trees and vines for four or five times the ordinary price and contracted to take the fruit at fancy prices—5 cents per pound for grapes, and \$2.50 per bushel for pears, plums and quinces. The purchaser was to pay for the trees or vines with the fruit produced from them, but he was required to give his note for the full amount of his purchase, the privilege of renewing it, from year to year, being promised.

In the article referred to, this fruit scheme, with its notes, contracts, fancy prices, etc., was denounced as a shrewd, contemptible swindle, and our readers warned against it. It was clearly pointed out, that the purchaser paid fancy prices, gave a good, negotiable note, and received in return a contract binding on himself, but easy to be violated by the other party; that the object of the scheme was to get notes, and that the purchasers would, in all probability, be swindled. Sign no

receipts, contracts or notes that you do not thoroughly understand, for strangers. No matter how harmless it may appear on the face, keep your hands off of paper, was the advice given.

This novel scheme has turned out to be a swindle. From a recent number of the Pittsburgh National Stockman and Farmer we learn that the notes given by the tree buyers were discounted and thrown into banks, and that payment is now due. The investors realize now how they were victimized, and are combining to resist collection. This same fruit scheme is probably being worked now in other parts of the country. If he comes your way, kill him.

THERE is a movement among labor organizations to establish the eight hour system. It would not be difficult to have it adopted if that is all that is wanted. But they want ten hours' pay for eight hours' work, and that will be hard to get in these times. There are industries that cannot stand to pay increased wages now. If adopted, manufacturers will simply pay their employees by the hour. Wages will adjust themselves to supply and demand in some way or other.

IF THE bill now before congress, providing for the issue of fractional currency, becomes a law, the people will have much better facilities than they now have for sending small sums through the mails. Fractional currency is much better and more convenient than any postal note system yet devised. Only about fourteen per cent of the post-offices issue money orders and postal notes. They cannot be obtained by the people who live remote from the large business centers, the very ones who would find better postal facilities a great convenience. They could and would use fractional currency for obtaining hundreds of useful articles. The fact that silver coin and postage stamps, both of which are unsuitable for sending by letter through the mails, are used for this purpose in large quantities, shows the need of a fractional currency.

A SUBSCRIBER asks the following question: "Can any organization in the United States change the price of farm products for any length of time?" It is presumed that he wants to know if it is possible for farmers, by organization, to advance the price of their products.

Yes, there is a way by which it can be done. Whether it ever will be done or not is quite a different thing. Suppose, for example, that the farmers of this country, upon agreement among themselves, were to limit the production of wheat to the actual needs of this country, and raise none for export. Then they could advance the price to that of the foreign market and add the twenty cents per bushel tariff. That is, if the price at Liverpool were \$1, they could demand and get \$1.20 per bushel.

It is also possible, but not probable, that the advanced prices could be maintained for some time. The trouble would be that so many, tempted by good prices, would

fail to keep the agreement, and would raise more than their quota. This, of course, would give a surplus for shipment, and upset the whole thing.

THE sending out of samples of weed seeds, especially of noxious kinds liable to become mixed with grass seeds and grains, can be recommended to all agricultural stations as a praiseworthy piece of work. It is suggested as an improvement over the sample package plan used by the Michigan station, that they adopt the method of mounting the seeds by gluing them fast with gum-arabic in little clusters on a piece of stiff card-board, with the name written or printed under each cluster.

IN New York state the members of the Farmers' Alliance have dropped the name but not the objects of their organization, and united with the Farmers' League. The following is taken from the "plan of work" of the New York State League:

In New York, the special and immediate object of the Farmers' League is to secure an equal tax law, so that the personal property which now escapes taxation may bear its just proportion of the public burden. The amount of such property which escapes taxation is reliably placed at over six billions of dollars. This sum is equal to more than two thirds of the actual amount of property that is taxed. If this property was fairly taxed, the farmers' taxes would be reduced nearly two thirds. The New York state branch of the Farmers' League believes this is the most crying evil that now affects her agriculture, but that after it is reformed, or meanwhile, there are also many other issues upon which united action by farmers in their political parties is needed.

The above shows that New York farmers do not have any faith in the single tax theory. The exemption of personal property is a long step toward single tax. They have had a fair trial of this half-way measure, and are satisfied that it is unfair. They are now moving away from single tax, and not toward it.

Suppose that a farmer is worth \$4,000, and that the land value of his farm is \$2,000. At the rate of 2 per cent he would pay, under single tax, \$40 taxes. For a neighbor he might have a millionaire living in a fine mansion on a lot the land value of which is \$500. Under the single tax he would pay \$10 taxes. The retired millionaire would pay \$10 taxes, and the hard-working farmer would pay \$40. Would that be just or fair? Society or government protects the life and property of both. It does much more for the millionaire than for the other, yet, under single tax, he could pay the least for its support. It would give capitalists a golden opportunity to escape taxation. It would be a benefit to them just as the exemption of personal property from taxation is to their advantage. Some single taxers are obtuse enough to claim that the opposition to their theory is in favor of the interests of capitalists. The latter are simply keeping quiet about it, knowing that it will not do for them to advocate it openly, and also that if it is adopted they can reap the advantages.

FARM AND FIRESIDE.

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Our Farm.

AGRICULTURAL CHEMISTRY

From the Standpoint of the Practical Farmer.

BY JOSEPH (TUISCO GREINER).

No. 30.

SOLUBLE VERSUS INSOLUBLE PHOSPHORIC ACID.—The difference in the prices of soluble and insoluble phosphoric acid is worth considering. For the former we have to pay eight cents per pound, and often more; while the insoluble acid can be bought for two cents per pound, and sometimes for less. In other words, the material itself, in finely divided form (ground as floats, ground rock, or as phosphate meal), costs us not over two cents a pound, but to manipulate it so that it will be immediately available, may cost us an additional six or eight cents per pound.

In the production of crops which make comparatively large money returns for the actual plant food consumed—fruits, vegetables, etc., whenever such may need phosphoric acid—and of crops generally which come to full development in a short period, we have no choice but to use the plant foods in the most readily available condition, and here we will often find it profitable to pay eight cents or even more for our phosphoric acid, and to buy it in the shape of high grade commercial fertilizers, or in dissolved bone or simple superphosphates. We want the full, immediate effect at any cost.

There are circumstances, however, under which we might well consider the advisability of trying the insoluble forms of phosphorus. This is so, especially, in growing ordinary farm crops with orchard and bush fruits, and all other crops requiring a long period of development. The insoluble forms will also offer great opportunities when we have an eye to future effects and permanent amelioration of the soil. If the phosphoric acid is only in a finely divided form, although insoluble in pure water, part of it will become soluble in water containing carbonic acid, and such is always present in the soil water where the soil is not utterly destitute of vegetable matter. If we apply two hundred pounds of superphosphate per acre, we furnish thus to the crop about thirty-four pounds of phosphoric acid at a cost of \$2.50 to \$3, or perhaps eight cents per pound. At the same expense we can furnish to the crop or soil four times as much phosphoric acid, or say one hundred and thirty-six pounds, in an insoluble form. If one fifth of this is rendered available through the help of the carbonic acid in the soil, or otherwise, this application will have about the same immediate effect

as that of the superphosphate, and then there is four fifths of the whole phosphoric acid left for use of future crops. Thus we secure the same effect in each of three, four, or even five years.

The investment in two-cent phosphoric acid, when applied heavy enough from the start, may bear large interest. So, after all, a little time and patient waiting may often be the cheapest agency to convert the insoluble phosphoric acid, worth two cents a pound, into soluble phosphoric acid worth eight cents a pound. Perhaps the soil may be an admirable storage place for the cheap, simple phosphate, to let it improve; that is, become available and consequently more valuable with age.

I have just learned that phosphate meal, or iron slag, repeatedly mentioned by me in these columns, is not any longer imported from Europe, but now manufactured by the Pottstown Iron Co., of Pottstown, Pa., and may be had from them. At present I am not informed about its price, nor its analysis, but am making inquiries.

SOIL DEFICIENCIES.—While phosphoric acid is usually the first substance of plant food that becomes deficient in ordinary farm soils, and the application of which will often bring the former good yields, it should be stated that simple phosphates (insoluble) hardly ever show much effect unless the soil contains vegetable matter; for carbonic acid is needed to make the phosphoric acid soluble; also, that after the continued use of plain phosphates or superphosphates, the land will not respond to further applications of it. Potash, lime, etc., may next be needed, also. The cheapest form in which to apply this may be in kainit, perhaps in muriate of potash.

The present price of kainit in New York City is \$12 to \$13 per ton. It is especially valuable for beets, fruits and all deep-feeding plants. It sinks deeper into the soil than any other form of potash. For reclaimed swamp and muck lands, it is especially valuable, but for potatoes, the German authorities do not consider it safe unless applied to a preceding crop, or at least in the fall before. As a rule, kainit should be applied during fall or winter rather than during the growing season, for any crop. The importer sells it under a guarantee of a minimum percentage of thirteen or fourteen per cent.

THE APPLE-TREE SILK MOTH.

At this season people are often puzzled over peculiar large, brownish cocoons, like that shown in Fig. 1, which occur on apple trees as well as various other fruit and shade trees. In central Ohio these cocoons are now quite common. They belong to one of the largest and handsomest insects found in America—the Cecropia Emperor moth, or apple-tree silk moth, shown at Fig. 2.

This moth often measures across the front wings six and one half inches. The ground color of the wings is a grizzled, dusky brown, with the hind margins clay colored; near the middle of each of the wings there is an opaque, kidney-shaped, dull red spot, having a white center and a narrow, black edging, and beyond the spot there is a wavy, reddish band, bordered internally with white. The fore-wings next to the shoulders are dull red with a curved, white band, and near the tips of the same is an eye-like, black spot within a bluish white crescent. The upper sides of the body and the legs are reddish; the forepart of the thorax (the middle part of the body) and the hinder edges of the rings of the abdomen are white, and the underside is checkered with red and white.

The moths come forth from the cocoons in June, and deposit on various trees

their eggs. A single moth will sometimes lay several hundred eggs. About a week later the eggs hatch into small, spiny caterpillars, that at once begin to devour the foliage about them. From time to time they shed their skins, or molt, a process by which they are enabled to grow in size. They are very voracious, and when full grown are often over three inches long and as large as a man's thumb.



FIG. 2.

One of them is represented, natural size, at Fig. 3. In September they spin cocoons, and within the cocoons change to pupæ chrysalids. They remain in this condition within the cocoons through the winter, and the following summer come forth again as moths.

These insects have many enemies, and in the central states rarely do serious damage. But on the tree plantations of the West they often strip the young trees of their foliage. CLARENCE M. WEED.

WOOL GROWING.

The president of the Ohio Wool Growers' Association, David Harpster, makes the following address:

TO THE FARMERS AND WOOL GROWERS OF OHIO AND OF THE UNITED STATES:—There has been no time in thirty years past when farmers have suffered so much from low prices of farm products as now.

The cause of this is plain. The crops of 1889 were as follows: Wheat, 490,560,000 bushels; corn, 2,112,892,000 bushels; oats, 751,515,000 bushels; besides rye, barley, buckwheat, hay, etc. There has been an over-production of 100,000,000 bushels of wheat, for which there is no market except in Europe, where it is met with wheat from the East Indies and Russia raised with labor costing only from six to twenty cents per day, and hence the European price is low. There is substantially no foreign market for corn or oats.

The remedy for these conditions is plain. The people of this country consume annually the equivalent of 600,000,000 pounds of unwashed wool. If we should produce, as we can, and under a sufficiently protective tariff would, all this wool, we would have 100,000,000 sheep. But under the tariff reduction of 1883 our flocks have been reduced to 42,599,079, producing about 210,000,000 pounds, and we import in the form of wool and in woolen goods the equivalent of 360,000,000 pounds. When we import this wool we patronize foreigners; we practically import the corn, oats and hay that fed the 60,000,000 foreign sheep whose wool we import and use, and the wheat and meat that fed the men who cared for the flocks and fenced the land to graze them.

If congress will give us a sufficient wool tariff, we will soon cease to import wool, we will add 60,000,000 to the number of our sheep, and these will make a demand and give us fair prices for all the surplus corn, oats and hay we now produce, and make a demand for still more. This would enable us to take 10,000,000 of the 33,000,000 acres we are annually devoting to wheat, and keep it fertile by devoting it to sheep husbandry, and with this change we would raise less wheat, cease to export wheat, and our prices would then be on an American basis, fair as compared with the prices of all other articles, and no longer the prices of Europe. In fact, in a few years there will be no foreign market for American wheat. A sufficient wool tariff will restore prosperity to our farmers, and thus every farmer is interested in a sufficient wool tariff, whether he owns sheep or not.

The object of this address is to ask the farmers of the country to appeal to the president to put a speedy end to the monstrous frauds now being perpetrated in importing wool, and to appeal to our members of congress to aid

in the same work, and to speedily pass a wool tariff law that will give to wool manufacturers and wool growers the exclusive privilege of supplying all the woolen goods and all the wool required for use in the United States.

During the past year nearly 8,000,000 pounds of an article called "waste," made in Europe to evade our tariff laws, which is, in fact, good scoured wool, worth from fifty to sixty cents per pound, equal in all to more than 24,000,000 pounds unwashed wool—more than

the whole wool clip of Ohio—was allowed to be imported at a duty of ten cents per pound, equal to about three cents on unwashed Merino wool. The secretary of the treasury, a few days since, decided this must hereafter pay thirty cents, as the law requires. Now, if he will see the law enforced, and remove custom-house officers who will not enforce it, this evil will cease.

But this is not the worst fraud. The law now requires carpet wools to pay a duty of two and one half cents per pound, washed or unwashed, and seven and one half cents if scoured. But these wools are allowed to come in scoured at two and one half cents. A letter dated February 20, 1890, from one of the best informed men in our great importing cities, now before us, says:

"The abuses of this importation are now most atrocious. No attempt is made to enforce the law as to scoured carpet wools. Yet nine tenths of the nearly 100,000,000 pounds (imported last year) was really scoured."

Another letter, of February 23, says:

"I have seen the floors of several wool dealers * * * covered with freshly-landed bales of scoured Donskoi wool, at two and one half



FIG. 3.

cents duty, to take the place of American wool. The market for the spring clip will break with a great crash."

And the letter says these wools very largely go "direct into clothing mills, as one third of the so-called carpet wool does now. * * * Two large dealers told me that nearly all the clothing mills they supply take nothing now but imported carpet." We have samples of this scoured wool—good wool for the manufacture of clothing. The duty of two and one half cents is less than the equivalent of one cent per pound on foreign unwashed wool.

If these frauds and this low rate of duty continue, the imports will largely increase. The imports of 90,000,000 pounds last year, mostly scoured, were the equivalent of at least 150,000,000 pounds unwashed, equal to one fourth of all the wool consumed in the United States. This is practically free wool, and unless the duty is increased these imports will be largely increased and destroy our American wool industry.

Foreign wool can be bought now for about one half what it cost when the wool tariff act of 1867 was passed, and hence the duty now should be greater than then, and the "dividing line" in carpet wool should now be less than in 1867. The farmers should now insist on a duty of at least twelve cents per pound on Merino clothing wool unwashed, double on washed, and treble on scoured.

They should insist on the same rates of duty on combing wools. No reason exists for admitting this wool at less duty. With proper duty we would soon increase our long wool, best mutton sheep 20,000,000, giving us all the combing wool we need and abundance of the best mutton.

Carpet wool should be defined so as to include only the coarse, hairy wool known as carpet wool when the act of 1867 was passed, and it should be required to pay a duty of four cents per pound on all of the value of twelve cents or less, and eight cents on all over twelve cents per pound in value, as pro-

vided in the bill which passed the senate January 22, 1889. The duty should be double on washed, treble on scoured.

In estimating the value it should be fixed at the last seaport, whence exported to the United States, including charges in said port for reasons stated on pages 239-244 of the printed hearing before the committee on ways and means of the national House of Representatives, January 3, 1890, and shown, also, in the letter of A. B. Stearus, appraiser at Boston, date September 20, 1889, financial report, 1889, page 848.

To prevent frauds, the new tariff law should (1) define washed and scoured wools, (2) it should prevent "admixture frauds," (3) "round lot frauds," and (4) "sorting frauds," as described at the hearing before the committee of ways and means, and should impose a duty of thirty cents per pound on *noils*.

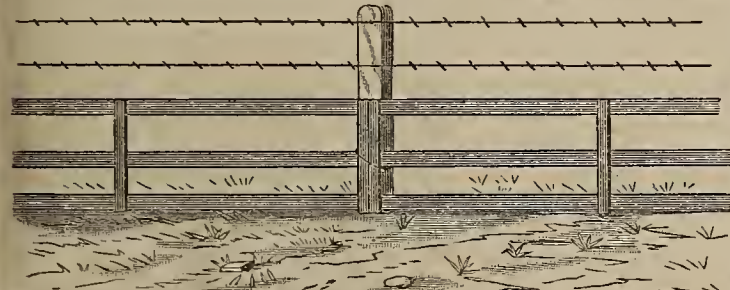
If wool growers cannot secure these provisions against frauds, and a valuation of carpet wools at the last seaport of export to the United States, including all charges, on a dividing line of twelve cents and duties at least as protective in amount as those provided in the senate bill, they should hold conventions to determine their political course of action hereafter, in order that they may secure just and necessary legislation.

Justice requires that farmers should have protection to as full an extent as manufacturers.

This brief address is deemed proper in view of the fact not generally known that persistent efforts are being made to secure just and ample protection for manufacturers but to deny the same measure of protection for farmers.

A HANDY HOG FENCE.

I enclose a drawing of a handy hog fence. Get boards one inch thick, four inches wide and fourteen feet long. Make them into panels as shown in the cut, and lap the ends of the panels against the post. Take a piece of smooth fence wire,



A HANDY HOG FENCE.

wrap it around the post and ends of the panels, twist the ends tightly together. Put wire above the boards, or, if you wish, make the panels four boards high and you will need no wire. By putting wires at the top of the fence you can turn in horses and cattle. This makes a good fence, and one that is easily moved without any splitting of boards and wasting of nails.

B.

Richmond, Kan.

HOW TO UTILIZE BONES.

Bones from the table can be most profitably utilized by feeding them to pigs and poultry. The bones that are small and soft, such as fish and poultry bones, will be eaten by pigs, and the larger bones can be broken up on a large, flat stone, with a wooden frame around to keep the pieces from flying off. It is surprising how many a flock of hens will consume. Keep the hens housed at night and on cold, stormy days, and the hen manure will be very rich, and I think the eggs, also, as their quality, as well as their quantity, is affected by the quality of the food.

Nutley, N. J.

J. RUSBY.

HOW TO DETECT SALICYLIC ACID IN FOODS AND DRINKS.

For the detection of salicylic acid in sweet cider, shake up about a fluid ounce of the cider with an equal volume of ether in a cylinder or bottle. Allow to subside and decant the clear ethereal solution on a large watch-glass. After spontaneous evaporation of the ether, the salicylic acid will remain in the form of aggregations of needle-shaped crystals, visible under a lens or even to the naked eye.

If the crystals be treated with a solution of ferric chloride (sesquichloride of iron), a violet or purple solution will be produced.

For alcoholic liquors, as fermented cider, wine, beer, etc., it will be necessary to expel the alcohol, by evaporation of the liquors, to about one half of their volume. On cooling, the salicylic acid is extracted with ether as above.

For canned fruits, vegetables, etc., use the liquid portion for extraction with

ether. If there is no liquid portion, stir the substance up with water and strain or filter off the aqueous solution for the ether extraction.

Sirups, as maple sirup, may be extracted with ether in the same way, without previous additions of water.

PROF. H. A. WEBER.

Ohio State University.

HOGS IN THE SOUTH.

Slowly, but surely, the South is coming to the front as a hog country. Our farmers are finding out that the one-crop way of farming is not the best. They cannot depend upon low-priced cotton to supply their tables with food and pay for the scores of other necessary things they need. They are finding that sending abroad for bacon not only keeps them poor, but that they can raise a much better quality of bacon right at home than the merchant can supply them with, and at far less cost. They not only make sweeter hams and shoulders, but better side meat, and lard that is far superior to the "brought on" article. And then the luxuries of good, home-made sausages, souse and "fat bread" which abound at hog-killing time! It makes one smack his mouth to think about them. But here are some of the reasons why the South is peculiarly adapted to hog raising:

Our climate is so mild, even in winter, that hogs can run in the fields and woods and find much to feed upon. Our forests abound in nuts of several kinds, and, usually, a fine crop of acorns. These help largely. With a good forest range, hogs need only be given one small feed a day.

In lieu of a forest range, a good field of stock peas is better, and costs but little

labor. Nothing makes better pork than stock peas, sweet potatoes and goobers; and all of these can be cheaply raised in the South. Indeed, they can be made cheaper than corn, even in the great corn states of the North-west; for the reason, that when

raised for swine, no harvesting is necessary, the hogs doing that work as their appetite demands. Even cotton seed have proven to be most excellent pork-making material. A Georgia farmer has discovered a process for roasting it, by which the lint—the hitherto fatal obstacle to their use as hog food—is burned off, the hulls rendered brittle, and the kernel greatly improved. He says: "I do not at the present time raise any corn at all."

"* * I roast and grind cotton seed into meal and feed it to everything I raise. I deem it equivalent to any food that is ever fed to animals. * * * It is better than oil meal; its virtue has not been extracted. It will keep for any length of time; will not mould, get musty or turn sour. * * * I can make as much pork from 100 pounds of roasted cotton seed as I can from 100 pounds of corn."

This process of treating cotton seed will, evidently, tend to enhance their value to the southern farmer, and greatly increase his facilities for raising hogs.

I have found watermelons to be a profitable crop to feed to hogs. They are cooling and nutritious, and pay well for hog food. Indeed, the South is specially adapted to such a variety of food crops for swine, that it is strange that more general attention has not long since been given to the hog.

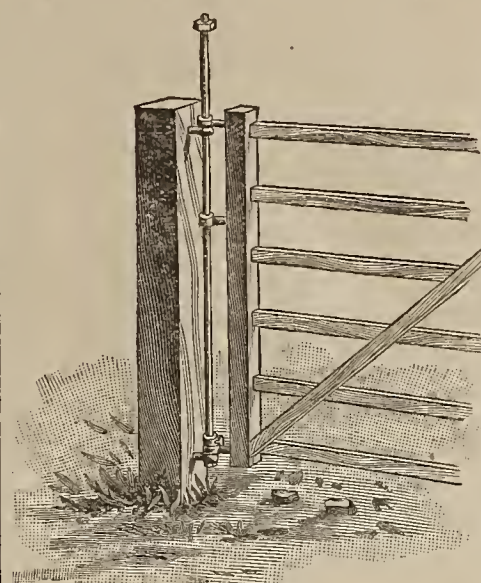
Previous to the war, almost every farmer raised an abundance of bacon. The war left the country in such a demoralized condition generally, that few of the old southern farmers had the heart to make an effort to raise hogs, because hog stealing was so common. Times are better now, however, and hog stealing is not the menace it once was to this branch of Southern farming. A good, dry shed for them to sleep in is all the shelter they need. With a grass pasture, peach and plum orchards, a field of stock peas, a few acres in sweet potatoes, goobers and melons, the southern farmer is "solid" for plenty of good, cheap bacon. His surplus labor can then be profitably devoted to cotton, corn and a garden; and with a few horses, cows, sheep or goats, and plenty of poultry, if he is not happy he will never be in this world.

Texas.

DICK NAYLOR.

GATE-HINGE.

I send a description of gate-hinge that I invented and used. It works well, and if it is of any value to the readers of the FARM AND FIRESIDE I am glad of it. It can be used on any kind of a gate. The rod should be made of inch iron; the four



GATE LOWERED.

eyes of three-fourth inch iron. The eyes in the top of the gate should be 16 or 18 inches apart, to allow the gate to be raised to pass over snow. The collar with the thumb-screw will hold the gate up or down, as wanted. This gate will open both ways and raise over the snow. The hangings can be made by any blacksmith. The cuts show plainly how the hangings are made and used.

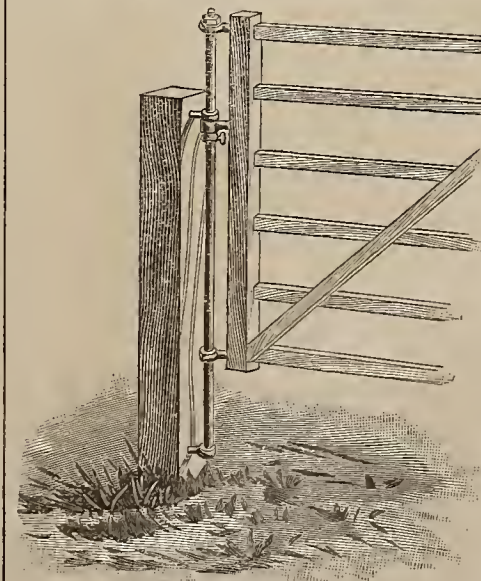
H. TUCKER.

Michigan.

THOMAS' SLAG.

We look upon the articles on "Agricultural Chemistry" as of the greatest importance. It is from such articles as these that the farmer can gain ideas regarding that branch of science, that he is likely to look upon as something beyond his comprehension. In the March 1st number of the FARM AND FIRESIDE, mention is made of Thomas' slag and the fact that experiments have been made with it, in which favorable results have been obtained. Having made some experiments with that material in connection with other forms of raw phosphate, we thought the result might be of interest. At this time we will only speak of the Thomas slag in connection with phosphoric acid made soluble by the use of sulphuric acid in the shape of dissolved bone black.

The trial was made in a soil that was well reduced in fertility, and was supposed to be in a condition easily susceptible to the influence of the phosphoric acid. It was used with corn, and the soil was first treated to a dressing of sulphate of ammonia and muriate of potash, sufficient to produce an average crop of corn. There were eight plats in the experiment, two of which had no phosphoric acid. One received dissolved bone black at the



GATE RAISED.

rate of 256 pounds per acre, and another, Thomas' slag of equal value to the first. The season of 1888 was not favorable, being excessively dry during its greater part, and the results were not such as would have followed with more moisture. But as it was, the plats with no phosphate produced over 43 pounds of grain, and most of it soft. The dissolved bone plat gave about 244 pounds of grain, and the

Thomas slag gave about 91 pounds. The corn came up about alike, but that with the Thomas slag presented the best appearance at first. From the above, it shows that the slag almost doubled the amount of grain, giving a fair proportion of sound corn. A fair presumption would be that the phosphoric acid from the dissolved bone black was largely taken up, and in order to determine to what extent, we continued the plats to corn during the year 1889, furnishing, as before, a sufficient amount of nitrogen and potash in the forms named. The plats with no phosphate gave about 13½ pounds, all safe; the dissolved bone black, 36 pounds, and the slag, 61, showing that while the first year there was a gain by the bone black of 202 pounds over the plat with no phosphate, the second year there was a gain of only 24 pounds; but with the slag the gain the first year was 48 pounds while the second year it continued about the same, which is an interesting feature of the experiment. The same experiment was also repeated in 1889, with this result: With no phosphate the yield of grain was about 54½ pounds; with bone black, 218 pounds; Thomas' slag, 138 pounds.

During this season it will be remembered there was an excess of moisture, which may account for the nearer approach of the slag to the soluble phosphate. It still remains an open question, how long effects may be felt from the Thomas slag. It is a little remarkable that the effects the second year should compare so closely with the same for the first year. How far atmospheric conditions affect results we are unable to say.

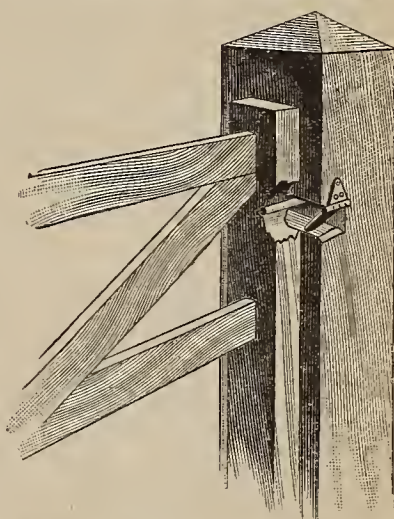
It is gratifying that friend Greiner introduces subject matter upon which there can be offered, as the lawyers would say, "corroborative testimony." Farmers will take science in these small doses when they would be alarmed at larger ones.

WM. H. YEOMANS.

Connecticut.

GATE-LATCH.

The illustration of the gate-latch is reproduced from "Fences, Gates and



Bridges." While the latch is not as convenient as many others, it is one that prevents stock from opening the gate. For a gate that opens both ways, extend the mortise to the opposite side of the post and put in another hinge, making a double latch.

CLEAN MILK.

The man who thinks that if there is any filthiness in milk, it is better to get it out by even the very fastest of the slow gravity creaming methods, instead of forcing it out at the rate of four miles a minute, while it is fresh and young, has curious notions in his head. The much vaunted private dairy butter of the world is most all made through the gravity process of raising the cream, and if passably clean and pure, will make butter good enough for those who simply squeam; but there was never a can of the cleanest of such milk set, that the cream separator could not extract from it more offensive matter than can any iced creamer on the earth.—Hoard's Dairyman.

HOW FARMERS ARE TAXED.

It is not uncommon to hear our farmers complain of the taxes they have to pay. Sometimes they are too high and the payment of them could be largely lessened by increasing the productive power of an acre of ground. For instance: a farmer who sows poor seed, raises scrub stock, or buys antiquated or imperfect implements, must certainly pay proportionately high taxes. Not to mention the improvement he might make by getting the best seed and live-stock, he could buy a Deering Binder or Mower, and save money in the harvesting of his grain and grass crops.

Our Farm.

GARDEN GOSSIP.

BY JOSEPH.

ROWING ONION SETS.—To tell the story in a few words, I would say, select a piece of sandy soil, or sandy loam, free from weeds. A well-tended carrot or beet crop fits land nicely for a crop of sets. Manure fairly well, but not excessively, plow and harrow, and get it in good shape, finishing with the Meeker harrow or steel rake. Then mark out furrows just far enough apart to permit the convenient use of a wheel-hoe. Now sow the seed at the rate of thirty or forty pounds per acre, selecting extra Early Red for red sets, Yellow Dutch (or Danvers) for yellow sets, and Silver Skin for white sets. When the plants appear, set the wheel-hoe going, also pull up any stray weeds, but do not thin. Later on, roll an empty barrel over the rows to break down the tops and ripen the bulbs. When the tops begin to wilt and die, gather the sets by running a trowel under the row, lifting them out and throwing into a fine sieve; or roll them out and together in windrows with a rake; leave a few days to cure, then store on the floor of a dry loft, in layers but a few inches deep, or put in crates, and keep in a dry, cool room.

WATERPROOF MUSLIN FOR HOT-BEDS.—G. A. W., of Lebanon, Me., gives us the following recipe for painting muslin: Take one quart of linseed oil, one pint of lime water, the yolks of fourteen eggs and the whites of four eggs. Boil oil and lime water together, remove from fire, stir a few minutes, then add the beaten eggs, stirring until thoroughly mixed. Have the muslin tacked on the frames ready for covering the hot-bed, and paint with the mixture, giving them two coats. It will be enough for about three sashes of the common size, 3 by 6.

BEAN RUST.—C. B., of Canton, Ill., writes that the bean rust has never struck her vines unless they were disturbed by hoeing or otherwise when wet. I have had whole crops ruined entirely by bean rust, and the vines were never touched except when perfectly dry. Even the newer rust-proof sorts did not escape in some years, and altogether I have not been able to see a great deal of difference concerning the rust attacks and spread, whether the plants were touched when wet with dew, or perfectly dry.

NOVELTIES.—In FARM AND FIRESIDE of March 1st, I notice a somewhat too harsh criticism of our seedsmen and their novelties by a contributor. I confess I have a great respect for these seedsmen, as a class. Most of them deal honorably and squarely with us, and we should not forget that we owe to them and to their untiring energy and enterprise all our fine, modern varieties of vegetables. These same seedsmen are scouring the world over, and pay out fortunes to originators and discoverers of valuable new things, and spend money lavishly in order to bring such new things to the attention of the people. Of course, they expect pay for their work and enterprise, and the only way to get it is to make people try such things. We sometimes blame them for telling us only the good qualities of their novelties, and hiding their faults. But merchants seldom do otherwise, and frequently the introducers are so prejudiced in favor of their fondlings that they, like fond parents, are unable to discover any bad features in their children.

Still, we must draw the line somewhere. We should not excuse or tolerate misrepresentations. In one of the trade catalogues, for instance, I notice a beautiful picture of the Peach tomato, representing a nice little tree, like a peach tree, with fruit spread all along the branches. In the text I see it stated that "the artist has made the plant resemble a tree too much, but the appearance of the tomato is correct." Now, since many people will see the picture who never read the description, they will be misled by the engraving, and altogether, I think the use of a picture known to be incorrect or exaggerated, is nothing more nor less than a gross misrepresentation. It should be known, too, that among tomato kind there is none

more sprawling, and with thinner foliage, than this self-same Peach tomato. If you want to keep it off the ground, you will have to stake it early, and tie it very firmly.

Another case of this nature is that of the everbearing tree blackberry, which the parties who control the sale have pictured as a beautiful tree loaded with berries, like a mulberry tree. The variety has the same general habit of growth as Kittatinny or Wilson, is a strong grower, very thorny, and otherwise not so very desirable that we would insist upon having it in our garden.

Another way of pushing novelties, which deserves censure and frowning down, is that by advertising a plant under a new name, like manettia vine, annual nutmeg plant, etc., with a glowing description of the beauties and other good points of these plants, but wisely leaving out the botanical name, which could give us a clue to the identity or true nature of the plant or vegetable advertised. Remarkable novelties, in the description of which the language used in these catalogues would be justifiable and proper, are never found, without the world hearing of it. At any rate, the first thing usually done with the newly-found, nameless plant is to classify it, and give it a botanical name, by which it can be recognized in every civilized country. If a professional plant seller prefers not to tell the correct name of the novelty, but advertises it under a name not found in catalogues and popular botanical works, we have reason to suspect that everything is not just all right.

Orchard and Small Fruits.

CONDUCTED BY SAMUEL B. GREEN.

FRUITS IN THE HOME GARDEN.

It is very important that each and every family should have plenty of cheap, wholesome fruits in their season.

Any one who has a garden 4 by 8 rods can grow many kinds, and at less cost than the same quality can be bought. True, at times, fruit of all kinds becomes a drug in the market, but much of it is stale and unwholesome. To have it in its prime, it must be picked fresh. A strawberry bed the size of the dining-room will supply any family with all they need. Set those kinds that are productive and reliable; do not set more than half pistillate varieties. Twenty-five raspberries set near the fence and kept clean and well enriched, will give from two to eight quarts of berries from each hill, two or three years from planting. It is the same with gooseberries, currants and blackberries.

If in Wisconsin a person plants one yellow Transparent, one Duchess of Oldenburg, one Wealthy or Whitney apple, he will have a succession of choice apples for four months. The winter apples may be bought better than raised on a small plot of ground.

In selecting varieties of any kind of fruit, if you know of any soil or situation like your own where any variety of fruit is a success, it would be well to try that kind. If there is a reliable nursery near by, go there, and the proprietor ought to know what will pay you to plant. If there is no nursery near, write to some one who has a reputation at stake and he will not mislead you. There is a plenty of good nursery concerns advertising in all good family papers. Don't give an order to a stranger, for nine times out of ten you will get worthless stock, not adapted to your location, not true to name and perhaps much of it dead. These traveling tree tramps want your money; that is about all, and they give but little in return. No matter what promises they make, they must have about four prices to pay their expenses. You can buy the best apple trees at 15 to 25 cents each, plums at 25 to 40 cents, pears and cherries the same, raspberries and blackberries at 2 cents each, the best strawberries at 1 cent, and currants and gooseberries at 5 cents each, so don't be fooled into paying enormous prices because a thing is new; there are plenty of good varieties that have been tested.

The Jessie strawberry is one of the best

large berries; Bubach No. 5, from Illinois, has proven one of the best pistillate kinds for general planting; Warfield No. 2, from Illinois, is more productive than Wilson, but a pistillate variety. These three varieties can be sold at 1 cent each, so don't be fooled into paying \$1 or more per dozen, when any reliable dealer will send them to you by mail at \$1 per hundred. Whatever you plant, give it the best care. Wisconsin. GEO. J. KELLOGG.

GRAFTING THE CHESTNUT AND HICKORY.

Under the head of "Nuts and Nut Trees" the grafting of the chestnut and hickory is considered. In our dry climate we neglect to prevent too rapid evaporation from the scion while the rather slow process of uniting with the stock is going on, yet in the moister climate of a large part of Europe, this is never forgotten in grafting the nut trees, the mulberry, or any other tree known to be slow in uniting by cellular growth. The plan adopted by Mr. Sharp, of Woodstock, N. B., is as good as any; namely, after the scion is inserted, and waxed or covered with clay, cover the whole with a tight paper sack tied at the bottom. Even in outdoor grafting the cherry and plum, in a dry time, I always put on what they call in east Europe the "night cap."—J. L. Budd, in *Orchard and Garden*.

INQUIRIES ANSWERED

BY SAMUEL B. GREEN.

Plums for North-western Ohio.—J. W. B., Bryan, Ohio. Lombard, Jefferson, Bradshaw and Yellow Egg plums all do well in any good soil.

Gregg Raspberry.—J. R. L., Trimble, Ohio. The Gregg raspberry is not considered hardy in central Illinois. The Souhegan and Ohio are hardy, however.

Apples for Cider.—J. D., Kernville, Cal. Newtown Pippin, Peck's Pleasant, Golden Russett and Yellow Belleflower are all good varieties, and are good for table use or for cider in your state.

Current Aphid.—A. B. B., Norwich, N. Y. The insect troubling your current leaves is the well-known current louse or aphid. Make a strong tea of tobacco leaves or stems and dip the leaves in it, or wash with whale-oil soap to destroy them.

Russian Mulberry.—J. H., Sowers, Tex. The Russian mulberry may be propagated from cuttings, layers and by seed. If you want fruit, propagate only by cuttings or layers from good varieties. It varies much, and many of the plants will be worthless for fruiting purposes, if grown from seed.

Bordeaux Mixture.—J. T. S., Winfield, Iowa. Bordeaux mixture is made by slacking four pounds of quicklime in twenty gallons of water; then dissolve six pounds of sulphate of copper (blue stone) in two gallons of water and add it to the lime water. Stir thoroughly and apply with a spraying machine.

Apple Pomace as a Fertilizer.—C. P., Fairmount, Ohio. Apple pomace is of very little value as a fertilizer for grapes or any other crop, and is not fit to put on the land until it has rotted a good deal. It is made up almost entirely of non-nitrogenous organic compounds, and is not worth any great amount of trouble to sow or use.

Ornamental Hedges.—O. P. S., University Place, Neb. We do not know, but think the Japanese quince is hardy in your location. It makes a very desirable, pretty, ornamental hedge and thrives well under close clipping. It is not vigorous enough for a stock fence, but animals do not like to go near it. Plant two-year-old plants about eighteen inches apart, to secure a good, thick hedge. Six inches apart is too close to plant them.

Kieffer Hybrids.—J. W. F., Darke county, Ohio, writes: "I have about forty Kieffers, five years' growth, and one especially that had sixty fine pears on. To get the best quality and most delicious flavor, Kieffer's Hybrid, like most pears, should not be allowed to hang on the tree until dead ripe, but should be gathered when fully grown and ripened in the house. They will color up nicely, and their rich, glowing-red cheeks, combined with a delicious perfume, make them a variety of pear with which but few others can be compared."

Osage Orange.—O. S. W., Craigsville, Va. The Osage orange, when raised from seed, is generally grown for one year in a seed bed before transplanting to the location for the hedge. The seed bed and also the land for the hedge should be thoroughly prepared by plowing and dragging. When ready for planting, the seed should be soaked in warm water for about twenty-four hours. The surplus water should then be poured off and the wet seed be allowed to remain in a warm place until it is about to sprout. It should then be sown in rows two feet apart. The plants may be obtained of most nurserymen, and will grow in almost any location.

Arbor Vitæ.—F. M. H., Pine Iron Works. Arbor vitæ may be raised from layers or cuttings. The layers should be made in the spring by bending branches down and covering them at some part with good, rich soil, which should be mulched to keep it moist. It is a good plan to just cut through the bark in a few places where buried, to aid in emitting roots. Cuttings may be made at almost any time of the year, of the young growth. I find that if made about the first of December they do best. They should be taken off about five inches long and put in moist sand, in a cool greenhouse, and they will be rooted by spring. They may be rooted in sand in a cool room in full sunlight. They root very slowly.

Tree Agents.—S., —, Pa. writes: "Will peaches reproduce themselves from the pit? My experience has always been that they would not. But a fruit agent in this section claims to have several varieties which will, without fail, give the same kind by planting the pit. He also has a plum which he claims will give double fruit; that is, two plums joined together instead of growing singly. You understand these matters and can tell me whether this reproduction from peach pits of same fruit in every way can be depended on?"

REPLY:—Don't bother with your tree agent, but send to some good nursery for your trees. There are a few varieties of the peach that come nearly true from seed, but they are not to be depended upon, and are not the best varieties. The only safe way to grow the best peaches is by budding the seedlings. As for the double plum, you had much better plant such standard varieties as Bradshaw, Lombard or Blue Gage. There is a variety that produces double fruit, but it is not successfully grown in your state and would not be especially valuable on that account, any way.

Apple Tree Borer.—J. W., Nanvoo, Ill. The borer in your apple trees is the round-headed apple borer, and is widely known over the whole country. The best treatment for you to follow is to dig out the borers. (Those that you cannot dig out without too much injury should be killed by punching them in their burrows with a wire, if possible.) After removing the borers now in the trees paint the trunks with the following: Plaster of Paris, three pounds; Paris green, one ounce. Mix these ingredients together and add enough water to make them of the consistency of common paint, and use at once. Also, a good plan is to paint the trunks with soft soap reduced to the consistency of a thick paint by adding a strong solution of washing soda in water. This should be put on during a bright, dry day, about the first of June. The eggs that hatch into the borers are laid by a beetle about the last of June or first of July, near the base of the tree. It requires about three years for the borers to become perfect beetles, and during all that time they live in the trees.

Apple Tree Root Aphid.—J. B. B., Palestine, Ark. The insect you refer to is the apple root aphid, and is often the cause of unhealthy growth or death of young trees, when the trouble is not known. The root form is difficult to get at, but first of all, no trees should be set until the roots are examined, and if this aphid is found on them they should be destroyed by dipping them in kerosene emulsion or in water at a temperature of 150°. The work of this insect may be known by the warty swellings on the roots. If these are found, the roots should be laid nearly bare and scalding water should be freely poured around them. If the roots are in the soil, water nearly at the boiling point will not hurt them. A mulch placed around the trees has been beneficial in bringing the insects near the surface, where they may more easily be destroyed. When found in the branches this insect should be treated with hot water, and sometimes it may be necessary to scrub the tree with a stiff brush wet in soft soap reduced to the thickness of paint with washing soda and water. It is very important to get rid of this louse, for if not destroyed it rapidly spreads over the neighboring trees.

Raspberry Culture.—A. M. A., Bradford, Pa. Raspberries should be planted out on well-drained soil. Land that will grow good corn will grow good raspberries. The plants should be set out very early, for if the planting is delayed the new sprouts that start early are apt to get broken in being handled. The plants should be set two feet apart in rows six feet apart. No fruit should be allowed to ripen the first year. The plants will not need pruning until the second year, when the new canes should be pinched back at the height of three feet. This will make them throw out side branches, and these, if long, may be pinched back once. After the second year the plants, if strong growers, may be allowed to grow over three feet before being stopped. The fruiting canes should be cut out as soon as the crop is gathered, that they may not interfere in the development of the young growth. This method of pruning should be carefully attended to, in order to make the plants stocky and self-supporting. The first season, one row of some crop like potatoes, cabbage or beans may be grown between the raspberries, but after the first year this must not be done. The land should be well cultivated and the weeds kept out. In dry weather it is especially desirable to cultivate the land often. Manure every year, for you can no more produce a good crop of berries without manure than a crop of corn. If the bushes are too weak to stand up well alone, a good method of holding them up is as follows: At intervals of thirty feet drive down a good, strong stake in the rows. On each side of these stakes fasten telegraph wire so that it will come on each side of the bushes. The wires should be tied together every fifteen feet. A trellis made this way is especially valuable in windy locations where the plants are apt to be blown over when the land is wet.

Our Farm.

THE POULTRY YARD.

Conducted by P. H. Jacobs, Hammononton, New Jersey.

SEPARATING FOR MATING.

WHERE a number of fowls have been together, and it is desired to separate them, so as to have each breed away from the others, in order to save eggs from them for hatching, it is well to separate them a month before using the eggs for incubation. We have known eggs to hatch pure-bred chicks when separation occurred only a week before beginning to save the eggs, but we believe the safer plan is to allow a month to intervene. We have been asked if hens in the yard with others of a different breed will produce chicks of the same breed as the hens that laid the eggs. This depends on the male. If a flock of Leghorns, with a Leghorn male at the head, is yarded with Light Brahmas, the chicks from the Leghorn hens will be pure Leghorns, while those from eggs laid by the Brahma hens will be a cross of Leghorn and Brahma. The presence of the Brahma hens will in no manner affect the purity of the chicks from eggs produced by the Leghorn hens. This is a very simple matter to discuss, apparently, yet many have written us asking for information in regard to it.

THE BARN-YARD FOWL.

The barn-yard fowl may be a good bird or it may be worthless. There is no fixed type for it, and there is no doubt that occasionally a flock may be found that possesses valuable points and characteristics. The difficulty with what is commonly known as barn-yard fowls is that no dependence can be placed on them for producing offspring that are uniform. Many birds known as barn-yard are really good results from crossing, or from using pure breeds occasionally when introducing new blood in the flock. We have known some of the best layers to come from ordinary, common stock, and to rival the pure breeds in every respect, but the breeding of such hens being unknown, they are the result of accident and cannot be reproduced in their offspring. The pure breeds, on the contrary, being bred for certain characteristics, give uniformity to their offspring and enable the poultryman to breed his fowls intelligently.

BROKEN-DOWN HENS.

It is often the case that a hen will reach a condition when we say she is "broken down." Now, a hen that is kept in good laying condition, and not overfat, will never reach the broken-down stage. In the whole of our experience we have always noticed that such effects can be traced to overfeeding, and are most prevalent among hens rather than with pullets, and the heaviest hens are the ones that suffer most. The hens in this condition are not really broken down, but are simply in an abnormal condition. They can be cured by withholding all food, allowing only water for drink, until they are reduced in flesh. It is best, however, when a hen is in the broken-down state, to sell her, as it will save the expense of fattening her and avoid loss of time. Such hens are healthy otherwise, and can be used on the table or sold without liability of imposing diseased meat on the consumers. A run on a grass plot, allowing no grain, is excellent for such hens, where it is desired to retain such as possess merit.

FARMERS AND BREEDS.

The breed regulates the profit in poultry just as much as it does in other stock. The dairyman no longer depends on the common cow for his milk, if he can use the Holstein, and in all other classes the value of the animals depends on their characteristics. If the farmer was as particular with his poultry as with other stock, he would find that he could secure a much larger profit for the amount invested. More eggs, hardier fowls, better carcasses and quicker sales would be the result, and as the improvement of poultry costs but very little, the common fowls should be discarded.

SOWING SEED FOR GREEN FOOD.

If green food is to be grown from kale, turnips or lettuce, the seed may be expensive. Those who use changeable yards sow oats, rye, sweet corn or sorghum, turning the hens on the plot as soon as the green food is two or three inches high. In this manner quite a large amount may be grown with but little labor, as no cultivation of the crop is necessary, any weeds or grass that may appear only assisting to afford a variety.

SOUR MILK.

Sour milk is relished by hens, but it should not be given them as a substitute for water, as water answers a different purpose from milk. The fresh milk is better at all times, but the buttermilk and sour milk may be given when the other is not easily obtainable. Chicks should have fresh milk, as the sour milk is not so good for them. Milk may be kept in pans and placed where the hens can drink it at will, or it may be given in the food.

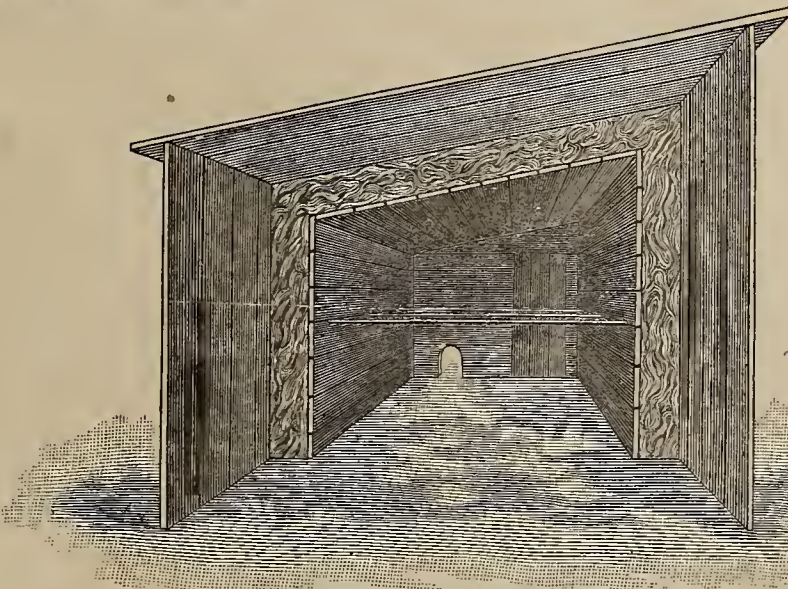
A STRAW-PACKED POULTRY-HOUSE.

How to make a warm house is shown by Mr. T. M. Bryers, Kingsville, Ont., who sends us the design shown. He describes it as follows:

"I have a small poultry-house, which is not double boarded nor felt lined, so in order to have the roosting apartments warm in winter, I place boards about one foot from the roof and the sides of the house and fill between with straw or corn-stalks, and find it quite comfortable for the fowls. I give the idea in the cut, the

can get without much expense. My chickens pay me better than anything else that I have on the farm, for the work it takes and the money invested in them. When I go out to feed in the morning I always take a bucket of water along and fill the trough. The chickens fly off the roost and run to get a drink. I keep Brown Leghorn and Plymouth Rocks, breeding them separately. If the farmers will take a little care of their fowls and keep an account of the eggs and chickens they sell for one year, it will surprise them. S. N. A. Lone Tree, Iowa.

CHICKEN CHOLERA.—I read in each issue of the FARM AND FIRESIDE the one question, "What will cure chicken cholera?" Now, if our brothers and sisters in the poultry business would feed to prevent the disease they would need no cure. It is far easier to prevent it than to cure it afterward. And how many chickens die with the cholera? I will venture to say that not one half of them do. It is many times nothing but a diarrhoea or dysentery, and can, in most cases, be traced directly to the diet on which the fowls are fed or allowed to feed. Too many allow their chickens to eat out of the pig-trough, and give them full access to the apple orchard. If allowed to eat apples or sour milk, diarrhoea will surely follow. Do not feed sour milk unless turned and mixed with corn meal or wheat screenings. Wheat is constipating, and is one of the best known preventives for diarrhoea and dysentery, or chicken cholera, and should be fed regularly twice or three times a week. In a severe case, wheat flour will act quicker, and should be fed as soon as the disease appears. If fowls are unable to eat, make into a ball and force down the throats. Cayenne pepper, put in the food once a week, is beneficial to all poultry. My experience cost me a great deal of poultry, and until I fed and tried to prevent, I was continually losing some. Feed nothing that has a tendency to relax the bowels, as chickens will find enough of that themselves. Keep the hen-house clean, pour coal oil on the roosts and a little in the nests. Put a little carbolic acid in the whitewash, and give them a good, dry dusting-box, and you will have little need of a cholera cure. W. B. Danbury, Ohio.



A STRAW-PACKED POULTRY-HOUSE.

eud, of course, being boarded up, except a small space for the entrance of fowls and a door. I fasten the boards that hold the straw with cleats, something like box covers, and they can easily be placed in position or removed. I find that a window-cover of boards (or anything) makes the house warmer at night.

"I will state I have kept fowls for many years, yet my hens never saw an oyster shell, and in ten years I have only had four eggs with soft shells."

CORRESPONDENCE.

A RENTER'S EXPERIENCE.—One half of the farmers think that poultry raising don't pay. The renters, as a rule, don't take any interest in poultry; because they are chickens there is no money in them. They don't stop to think for one moment what a flock of seventy-five hens will amount to in one year, or the eggs they lay, to say nothing of the chickens sold and killed to eat. Some farmers let their chickens roost on fences and in old sheds, to freeze to death in winters, and let them feed where they can get it. It is true that chickens will pick up a good bit to eat in nice weather, but in all kinds of weather they ought to be fed some, and more in bad weather, as they can't get out. Feed lightly in good weather. I am a renter, and on nearly every farm for rent there is no chicken-house (and also on some that are not for rent). The way I do, if there is no poultry-house, is to make one, and one that has but little expense about it, only labor. There are always boards enough around a place for the side, and I put a hay roof on it, and a ventilator in the roof. My roost is high in winter and low in summer. I clean out the chicken-house every morning. I feed corn and oats in the grain, and turnips and potatoes cooked and mixed with corn meal. I keep the fowls shut in on bad and cold days, but when it is nice I let them out, for they never seem as happy as when they run at large. I keep plenty of good gravel in boxes around the yard and in the hen-house. I have no bone-mill, so I burn the bones and pound them fine, all of which a farmer has, or

HOW I RAISE CHICKENS.—I have 100 acres of what is called Blue-grass land—50 acres in solid grass, where my chickens run. Twenty acres are a large sugar camp, and in the center of this my house and building stand. My chicks have great heads of leaves to scratch in. I have the White Leghorn, the Brown Leghorn, the Wyandottes, and the Langshans. I have twelve dozen in all. I only purpose to show what the stock is and what the effect is when crossed on other stock, and to show what I have learned by reading the FARM AND FIRESIDE for five years or thereabouts. Now, in the spring I separate each family to itself. That gives me pure eggs to set for hatching. The White Leghorn is very pretty for the lawn and lays well. I can see no difference in the laying of the White and Brown Leghorns, but I find that a great many of the White Leghorns die when small, and cannot stand the wet grass, when the dew is on, showing that they are quite tender, as every man knows that any kind of light stock is tenderer than the darker breeds. The Wyandottes are birds of good, square bodies, yellow legs, and lay well, and I find that they make a splendid cross on the Brown Leghorns, making a bird of a brown plumage, very heavy body, clean legs and a double, red comb, which does not freeze, and are admired by all who see them. The Langshans crosses well on the Wyandottes, making a short-legged, heavy-bodied, black chicken, with flat, double comb, and are splendid layers, but I don't like the cross of Langshan on Brown Leghorns, as it makes them most too shanky, of a speckled color, and they have a long, gawky appearance; but the Langshans are splendid layers. Now, as to the feeding and crossing. In crossing, I place two distinct breeds together, set their eggs, place the young chickens with a hen, and mark her coop. The same way with my pure stock. In the winter I open the gates and all run in the woods together, making, I think, a very pretty show of the different breeds, all mingling together. I feed boiled potatoes, thickened with bran, a teaspoonful of copperas in each feed, in the morning, and at night about twelve ears of corn at each house, as they all go home to roost. I find that well-fed hens are always laying, and the hens that are not fat do not lay. Corn makes eggs, but I find that it causes some leg weakness, but the heavy flow of eggs will pay for the few that break down, as I only have had three, so far, to fail. I go to the creek and haul a load of sand, and they soon clean it up. My garden is in the center of my houses and runs. I sow it in rye, early in the fall, and it will hide a rabbit against heavy frost, and the hens all run to the green rye; it is excellent for them and keeps their bowels regular. I am not troubled with cholera in my flock, and get plenty of eggs while the rye lasts. I intend to thresh two acres just to feed the grain. They drink all the milk and warm dish-water, in which I put a little lime. J. P. H. Cynthia, Ky.

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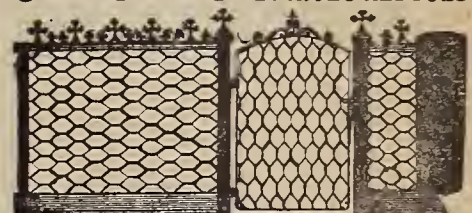
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Mention Farm and Fireside every time you write to advertisers.

EXTRACTS FROM CORRESPONDENCE.

FROM IOWA.—Farm land is worth from \$15 to \$25 per acre; pasture land is selling from \$7 to \$10 per acre. This land is as good Blue grass land as there is in the country. This is a good fruit country. Good winter apples sell from 20 to 25 cents per bushel at gathering time. Corn is worth 20 cents per bushel; oats, 17 to 20 cents; choice timothy hay, \$3 per ton.

Selma, Iowa. I. N. F.

FROM ARKANSAS.—This land district embraces thirteen counties which contain 50,000 to 200,000 acres each of government land. These lands are both bottom and hill, and will produce from 30 to 75 bushels of corn per acre, 18 to 25 bushels of wheat, or $\frac{3}{4}$ to $1\frac{1}{4}$ bales of cotton. We have good society, schools and churches, and good health. We have farmers here from the East who are doing well, and we would like to have more of them.

Solgoachia, Ark. M. M.

FROM MISSOURI.—Blue Springs is a beautiful little place of eight hundred inhabitants, situated on a high point on the C. & A. railroad, twenty miles from Kansas City. It has numerous springs of clear, blue water, from which it derives its name. The soil is rich, growing all kinds of vegetables suitable for canning purposes. We need a canning factory. Our citizens are intelligent and energetic, with plenty of school and church privileges.

Blue Springs, Mo. E. I. B.

FROM IDAHO.—We raise fine wheat, oats, barley and flax; corn don't do well here on account of cool nights. We often raise fifty bushels of wheat to the acre. Hardy vegetables do well. There is plenty of timber near, such as fir, cedar, tamarack, white and yellow pine and spruce. Deer, bear, cougar, lynx, elk, moose, mountain goats and other game are in abundance. Land is worth from \$10 to \$20 per acre. Transportation is our worst drawback. Health is excellent.

Leland, Idaho. C. L. H.

FROM MONTANA.—There are some vacant prairie lands left in Flathead valley, but the best are taken. Claims are selling from \$100 to \$1,000. Lands proved up are worth about \$300 more per quarter section. I have lived fifty-six years, and have observed that the prosperity of people depends more on themselves than the country they live in. My advice is, make us a visit; if you are satisfied with the "lay-out," sell and move here. But remember, the farther away the hills the greener they appear. None but cunning people can live here without money or labor.

Sheldon, Mont. A. C. S.

FROM KANSAS.—Butler county, for general farming and stock raising, is as good as any other county in the state. Crops of all kinds were good last year, as we had several fine rains in the early part of the summer. Corn yielded from 30 to 65 bushels per acre. Raw prairie land can be bought for \$3 to \$10 per acre. There is not one square foot of land that cannot be cultivated. The water is good; it can be found from 20 to 60 feet deep. The roads are good the year around. We have plenty of game, such as prairie chickens, jack rabbits, wild ducks and snipes. Corn and oats are sold at from 13 to 16 cents per bushel.

Sycamore, Kans. C. D. E.

FROM GEORGIA.—Griffin, Spalding county, in middle Georgia, has a population of about 6,000. It is connected by several railroad systems with all the markets east, west, north and south, and is an important shipping point for peaches, plums and grapes, of which immense quantities are produced in the surrounding county. It has attracted fruit growers from nearly every state in the Union, all of whom are delighted with the success that has rewarded their industry, and the warm welcome that is extended to them. The "race problem," so called, is not troubling us. The whites and freedmen are about equal in numbers, and all vote who want to, and their votes are counted. Land is cheap, and we want more people to come and help us improve this, the finest country in the world.

Griffin, Ga. A. W. J.

FROM KANSAS.—Barber county has natural advantages which make it one of the best farming counties in the state. The soil is very fertile and productive. The county is well watered by numerous springs, creeks and the Medicine river. As far as the eye can reach the country is one vast garden of grain, grass and wild flowers. Never in the history of Kansas has the prospect been more encouraging. We have had our hard times, but people of this state are enterprising and not easily discouraged. We have a sorghum sugar factory of 250 tons capacity per day, which will be doubled this year. The proprietors have sent to Germany for sugar beet seed and expect to manufacture a large amount of beet sugar. This is the banner county of the state for producing sorghum sugar cane. It makes 60 to 70 pounds of sugar, and 15 to 18 gallons of molasses per ton. We have a Farmers' Alliance in our county, which I believe is a good thing. Land sells from \$5 to \$25 per acre.

Medicine Lodge, Kan. J. A. B.

FROM WEST VIRGINIA.—Tyler county is in the north-western part of the state. It has an area of 200 square miles. The population is over 12,000. Middlebourne, the county seat, is a thriving little town of about 250 inhabitants. Some of the best land in the state is found here. Land ranges from \$6 to \$50 per acre; most of it is cleared. The principal crops are wheat, corn, potatoes and oats, which make good average yields. The timber is oak, walnut, ash, maple, hickory, linden, buckeye and poplar. The market is very good, considering the times. Eggs, 10 cents per dozen; butter, 15 cents per pound; chickens, 5 and 6 cents per pound; ginseng, \$2 per pound; corn, 50 cents per bushel; oats, 30 cents; wheat, 80 cents; potatoes, 40 cents; beans, \$1.50. Game, such as squirrels, rabbits, raccoons, opossums, foxes etc., is plentiful. Pheasants and partridges are also found. Emigrants who want a home in a good, healthful climate would do well to come to Tyler county.

Middlebourne, W. Va. C. H. R.

FROM TEXAS.—When a man comes to the conclusion that he can better his condition in life by moving to a new and better place than the one he is at, he should get all the information that he can concerning all advantages and disadvantages of new countries. I would say to all good, law-abiding people, who want good, cheap land under the bluest of blue skies, where their children can go barefooted ten or twelve months in the year and go to school ten months in the year, come to Texas, the land of the blessed. Texas offers greater inducements to emigrants than any other state or territory in the Union. The best land in these United States can be bought from the state of Texas at \$2 to \$5 per acre, in any amount from forty to six hundred and forty acres, on forty years' time, by paying five per cent per annum. I will say here that this land is as fine prairie as there is in the world. I am writing from Red River county, but I am not writing for Red River county, as it is an old-settled county, and prairie farms are high-priced. West and north-west Texas are the places for people to go to, who want good, cheap lands.

Clarksville, Texas. R. R. A.

FROM NEBRASKA.—Alliances have been organized in almost every township in our county, this winter. The farmers feel the effects of the low grain and stock market here, as well as elsewhere. Corn brings 11 cents per bushel; oats, 13 cents; wheat, from 25 to 50 cents; hogs, \$3.25 per hundred weight; cattle, from \$1.50 to \$3 per hundred weight. We ship a car-load of corn from here to Chicago and get about \$135 for it in Chicago. The freight is \$80, so we get \$55. It costs us three cents per bushel to get the corn gathered in the fall, so we are not getting rich very fast. Wages are from \$15 to \$20 a month for farm hands. The banks charge only 2 per cent per month for money, and it takes good collaterals to get hold of it at that. The freight was cut lately 10 per cent on corn, but it only amounted to $1\frac{1}{2}$ cents per bushel. It looked like it was a help; but what did the scalpers in Chicago do? They dropped the price 2 cents per bushel. There are not enough cattle and hogs in the state to eat half of the corn. Fully two thirds of the corn crop was piled on the ground last fall, on account of lumber being so high. It would not pay to borrow money at 2 per cent a month and pay \$25 per thousand feet for lumber to build cribs. In spite of all hardships, public sales go off well, young stock brings good prices, and people are looking for better times.

Bertram, Neb. M. J. A.

FROM CHEROKEE NATION, INDIAN TERRITORY.—We lived two years in the Cherokee Nation, on the Canadian river. This river is a muddy stream, slightly salty. The bottoms are wide and heavily timbered with oak, hickory, ash, cottonwood, box-elder, maple, locust, cedar, etc. Some white oak trees measure eight feet in diameter, and ash trees four feet in diameter, and cottonwood ten and twelve feet in diameter. There is no saw-mill in the Canadian district. The Cherokees say they will make the first man rich who brings a saw-mill in the district. The country is well watered and healthy. The soil on the bottoms is a sandy loam, very rich and three to eight feet deep, free from stones. There are some canebrakes along the river. The soil on the prairies is black and rich on a subsoil of yellow clay. The prairies are covered with grass from one to three feet high, mixed with flowers of all colors. There are some hills, ridges and peaks in the district—some very high and covered with timber and grass to the summits. They are very rocky. Some of the scenery is very beautiful and romantic. Corn and cotton are the principal crops. Corn averages sixty bushel per acre, and cotton 1,000 to 1,500 pounds seed cotton per acre. It is a great grazing country. The Cherokees are improving their stock, fine Short-horn and Holstein bulls being in every herd. Most of the Cherokees in the Canadian district are well fixed, and have large herds of cattle, horses (mostly ponies) and hogs. The woods are full of game, wolves, bears, deer, wild cats, panthers, coons, squirrels, rabbits, a few beavers, and some wild turkeys; and in the spring and fall great flocks of ducks can be seen on the rivers, and



Photograph of some of the Potatoes raised by Mr. C. B. Coy, Presque Isle, Me., on STOCKBRIDGE POTATO MANURE exclusively, winning the Grand Prize of \$1,100 for the best acre.

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whole flocks of green parrots fly scolding from one grove to another. The southern mocking bird can be heard singing the sweetest music on earth, and together with birds, flowers, green grass and sunshine, and a delightful climate and peace and quiet, it is almost a paradise on earth.

Beallsville, Ohio. L. M. M.

FROM TEXAS.—I want to say a few words about east Texas. We speak of east, west, north and south Texas. This is a great state in size and resources. It is about a thousand miles across from east to west, and starting from Sabine Pass on the south-east corner of the state and going to the north-west corner, it is about 1,500 miles. We have all kinds of climate, land and water. East Texas is peculiarly adapted to fruit culture. Here in Gregg county all kinds of apples, pears and grapes succeed finely. The Le Conte pear is being largely planted and will, no doubt, prove a valuable investment. The people are now turning their attention to grape culture. I have experimented largely with different varieties, and find that the Niagara succeeds better than any other. The Concord does moderately well, but from some cause the vines do not live long. The soil is sandy; woodland soil, light color with white and red clay foundation. Gregg county offers good inducements to those who desire to grow apples, pears and grapes. The country is poor, but when its fruit interest is developed, lands which can now be bought for \$2.50 per acre will be worth \$50. Several hundred acres of these fruits have been planted here in the last three years. One man planted fifteen acres in Le Conte pears. Three years ago he gave \$10 per acre for the land. He could now sell the same, with the trees just coming into bearing, at \$100 per acre.

Longview, Tex. J. T. P.

FROM FLORIDA.—The freeze of March 2d and 3d lightly touched Interlachen. The twelve hundred acres in oranges, within one and a half miles of the station, bear little evidence that there has been a frost here; while within a few miles, the mercury marked 6° lower, and fifty to one hundred and fifty miles farther south, more damage was done. Interlachen's immunity from damaging frosts has been remarked for years; hence the large investments in orange groves are safer than much farther south. The cause has not been satisfactorily explained, and I am not aware that it can be, but it gives great satisfaction to investors. Few villages in Florida, of its age, have made the growth of Interlachen. One of the reasons why, is above indicated. Another, the proprietors of the place laid the foundation in the church and school; sold few or no lots without the condition of their improvement. The town has had no boom, but a steady growth. It has no saloons nor gross dissolutions. A musical union, a literary club and church sociables furnish better entertainment. Can a man make a living here? Yes, in time; but it takes five or six years to bring an orange grove into bearing, and, until then, other means of support are necessary. But for persons with fixed incomes, though they be small, locations in Interlachen are among the most desirable in the South. Three good hotels adapt their prices and comforts to almost every class of hotel patrons, and cottage living is cheaper than in the North. The climate the present winter, until the first of March, has not been unlike an Ohio May or June. Those with some means, who would find a home with social, religious and educa-

tional privileges of a high order, with the best climate in the world, in the center of twelve hundred acres of orange groves, should not stand on the order of their coming.

Interlachen, Fla.

G. W. H.

FROM OREGON.—Our climate is that common to western Oregon and Washington, rainy winter and clear summer. Not a shower troubled us last season from the beginning of haying, which is here cut before grain, until all our grain was threshed, and this winter no provident man has had to work a day in the rain, unless he chose to. Wheat is the great agricultural staple of this region, oats and hay following. Corn is not grown as a general farm crop; hops are much grown and pay well; potatoes are grown extensively, and every variety of garden vegetable succeeds well. There has been, and still is, a large immigration to this part of the country. Land sells for all it is worth—thirty to seventy-five dollars per acre in this immediate vicinity. Fruit growing is beginning to attract attention and is a profitable business. There were about fifty tons of dried fruit, mostly prunes, shipped from this place the past season; this is the product of young orchards, very few of which have been planted more than five or six years. Cherries, pears, apples, peaches and prunes are the principal fruits grown, though with a home market, a vast amount of berries would be produced. One of our greatest needs is a cannery to handle a large amount of fruit and vegetables which the driers do not use. The recent, unprecedented flood did much damage along the larger streams throughout the state, and every means of travel and transportation was for a few days suspended.

Newberg, Oregon.

J. H. R.

FROM SOUTH DAKOTA.—Turner county is not the country it was when the bison grazed on its fertile plains, and the antelope skipped over its valleys. Turner county was organized in 1871 with a sparse population of 500, which has increased to 15,000. The people, as a class, are hospitable and generous, and we have good churches, schools and society. We have better advantages than many counties in older states. The price of land is \$10 to \$30 per acre. The climate is healthful and invigorating. Good wells can be made with little expense, and in certain localities artesian wells are made as cheaply as common wells. Several veins of coal have been struck. The soil has a dark, rich subsoil from two and one half to six feet in depth. Corn is the principal crop. Breaking is generally done in May and fore part of June. Flax is sown as soon as the plow leaves the field, and a crop is obtained the first year, which generally pays all expenses. Wheat does best as next crop, although good oats may be raised. The yield per acre of corn is 25 to 60 bushels; oats, 25 to 60; wheat, 10 to 30; flax, 5 to 20. Tame grass and clover do well. Potatoes are of the finest quality. All kinds of garden vegetables can be raised. All fruits that are adapted to this latitude do well. There is no natural timber to speak of, and no grubs to contend with in clearing a farm. Natural drains carry away the surplus of water, and it is estimated that 90 per cent of the county is tillable. This county ranks among the leading counties of South Dakota. It has four lively business towns.

Spring Valley, South Dakota.

J. J. M.

NO FARMER SHOULD BUILD ANY FENCE

Until he has written to S. H. Garrett, Mansfield, O., for Catalogue of Fence Machines, etc.

Queries.

READ THIS NOTICE.

Questions from regular subscribers of FARM AND FIRESIDE, and relating to matters of general interest, will be answered in these columns free of charge. Querists desiring immediate replies, or asking information upon matters of personal interest only, should enclose stamps for return postage. The full name and post-office address of the querist should accompany each query, in order that we may answer by mail if necessary. Queries must be received at least two weeks before the date of the issue in which the answer is expected. Queries should not be written on paper containing matters of business, and should be written on one side of the paper only.

Silk Culture.—F. P. F., Spencerport, N. Y. Send to the Secretary of Agriculture, Washington, D. C., for pamphlet on silk culture, and silk-worm eggs.

Persian Insect Powder, or Bnhach.—J. A. McL., Paxton, Neb. You can get Persian insect powder from your druggists. Do not buy it unless it is fresh.

Fruit Trees Wanted.—J. M. B., Sandoval, Ill. You can get all kinds of fruit trees from the nurserymen who advertise in our columns. Send for their price lists.

Sorghum Sugar.—J. W. B., Lebanon, Mo., asks if sugar can be made from cane on a small scale, without much machinery. It cannot be profitably made on a small scale.

Polled Cattle.—J. F. D., Jamesport, Mo., asks: "What breed of muley cattle are the best for all purposes?"

REPLY:—The red Polls would be our choice.

King of the Earlies Tomato.—Mrs. C. A. L., Valley, Neb., asks: "Where can this variety be obtained?"

REPLY:—Write to Z. De Forest Ely, Philadelphia, Pa.

The \$ Mark.—A. V., Arno, Idaho. "Various explanations have been given of the origin of this mark. One is, that it is an imitation of the scroll and pillars on Spanish coins; another, that it is a modification of the figure 8, denoting a 'piece of eight' (eight reals), a Spanish coin of the value of a dollar."—*Worcester's Dictionary*.

The above is the best answer to your question that we can find.

Adaptability of Soils.—A. W., East Java, N. Y., asks: "What kind of soil is best adapted to potato culture? Where can I find a book treating on the different soils and their adaptability to different crops?"

REPLY BY JOSEPH:—I would give a sandy or calcareous loam resting on porous subsoil the preference to all other soils, and a young clover sod to soils in any other condition. I know no work treating on the adaptability of the different soils to the different crops.

Ice Machines.—J. B., Cleveland, Ohio, writes: "Can you tell me something about making small quantities of ice daily, sufficient for a small dairy?"

REPLY:—We know of no cheap way of making small quantities of ice. Ice plants which turn out ice cheaply are very large and cost many thousand dollars. Even the smallest machines or plants are entirely above the reach of the dairyman. A large creamery might afford one.

Hen Manure and Burned Bones.—J. K. T., of Craig, Montana, asks: "How would a mixture of poultry manure and burned bones do for giving tomatoes and melons a good start, when nitrate of soda cannot be easily obtained?"

REPLY BY JOSEPH:—Poultry manure, applied early in the season, and preferably in solution, will prove a good substitute for nitrate of soda. The burned bone admixture will do no harm, even if it should not do much good.

Honey-producing Trees, Plants and Flowers.—L. R., Grant, Mo., writes: "Please name the honey-producing trees, shrubs, plants and flowers."

REPLY:—Too numerous to mention. Some of the best are the fruit trees, hawthorn, maples, willows, sourwood, tulip tree, locust, white and alsike clovers and golden rod and other wild flowers. Plant the fruit and shade trees that bear bloom which honey bees can work on, and sow alsike clover with other clovers, or with grasses, for meadows and pastures.

Dutch Belted Cattle.—F. B. P., Minneapolis, Kan., writes: "Is there a distinct breed of cattle known as 'Belted'? The specimens I have seen are black with a broad band of white encircling the body. They are said to be good milkers and breed true to color."

REPLY:—The Dutch Belted is a distinct breed of Holland cattle. They rank high in their native country for milking, breeding or fattening. They are similar to the Holstein-Friesians, but form a distinct breed. Quite a number have been imported into this country, and an association formed, which publishes a herd book.

Buckwheat.—C. W. W., Martinez, Cal., writes: "Is the Japanese buckwheat a good variety? Will it make as good white flour as the old kind? Will it sell as readily? Would you advise raising it extensively? Can it be got rid of when once in the land? Where can I get the seed?"

REPLY:—To the first three questions we answer, yes. Would advise you to try it on a small scale before attempting to grow it extensively. We do not know how buckwheat will succeed in your soil and climate. You can get the seed from the seedsmen who advertise in our columns.

Ownership of Tree.—L. M. P., New Lexington, Pa., writes: "A large poplar tree stood on my farm about ten feet from the line between me and my neighbor. The tree fell across the line on my neighbor's land, and he claims the part of the tree that lays on his land. To whom does the tree belong?"

REPLY:—The tree belongs to you. Your neighbor has no more right to that tree than he would have to one of your horses that jumped over into his field. The tree belongs to you, but you are liable to your neighbor for any damage you may have caused him by felling a tree on his land. Don't go to law about it and keep on until your lawyers have the tree and both farms.

Plantain.—C. F. M., Gretua, Ohio, writes: "F. A. R., Sugar, Kan., says that plantain is choking out the Blue grass in his dooryard. I will give my experience with the same. Six years ago my dooryard became a mass of plantain. We hired hands and cut every plant off below the crown, three times a year, and it only seemed to cultivate the plant. Then it was suggested by one of our neighbors that we sow red clover and yard grass very thick twice a year (in the spring and fall); we did so, and never cut another plant, but continued sowing the seed twice every year, and then kept the grass mown down with a lawn-mower. Today we have a dooryard of beautiful yard grass, as the grass in a few years smothered out the clover."

Onion Maggots.—E. E. F., Petoskey, Mich., asks: "What can be done to kill the small, white worms which are found in the roots of onions?"

REPLY BY JOSEPH:—These maggots are the offsprings of the onion fly, which is somewhat similar to the common house-fly. Strong, caustic lime water, if applied in sufficient quantity to soak down to the roots, will put an end to the pest, killing all maggots and eggs that it touches. The fly when ready to deposit its eggs, seems to prefer radishes to cabbages, and these to onions, and if radishes or cabbages are planted here and there among the onions, the latter will usually escape. The "catch" plants (radishes and cabbages) may be pulled up when infested with maggots, and destroyed.

Ashes and Muck for Potatoes.—A. W., of East Java, N. Y., asks: "What is the value of leached and unleached hard-wood ashes and muck, and how should they be used for potatoes to obtain best results? Also, where can I dispose of dried skunk cabbage root?"

REPLY BY JOSEPH:—The value of both leached and unleached wood ashes is very variable, and depends on the kind of wood from which they come, and the way they have been handled, and exposed, etc. The fertilizing value would range from \$4 to \$15, perhaps upwards. Dry muck is valuable chiefly on account of its nitrogen, which, however, is not immediately available. The best way is to compost the ashes with the muck, and apply in the drills above the seed pieces. Questions relating to medicinal roots and herbs could probably be answered by your druggist as well as by anybody.

Renovating a Meadow.—T. D. R., Norwalk, Conn., writes: "A thick, green moss is getting into some of my meadow land, and in some places threatens to run out the grass. The soil is rich and good, and the surface smooth, but below the surface the ground is full of stones, large and small, and I do not like to plow it up for reseeded. Can you tell me any way to get rid of the moss without plowing the ground? Would the sowing of salt, lime, plaster, or any sort of top dressing do it?"

REPLY:—The best way to renovate an old meadow without plowing and reseeded, is to harrow, cross-harrow and roll it just as soon as the ground is settled after the frost goes out, in the spring. Use a harrow with fine, sharp teeth. If it has teeth that slant backward, weight it and make it cut the sod. If necessary, sprinkle some grass seed over the thin places in the meadow. Apply a top dressing of good, fine, barn-yard manure, or apply some good chemical fertilizer.

Manure for Vegetables.—H. A. W., of New York state, writes: "What is the best fertilizer to induce quick and strong growth of early spring vegetables grown for market? What is the analysis of cotton-seed meal and hen manure? Could these manures be used to drill in with the seed? What manure is best for strawberries?"

REPLY BY JOSEPH:—There is nothing that will force early and rapid growth of vegetables equal to nitrate of soda. This should be applied in small quantities, and repeatedly. Hen manure is also excellent. It is best applied broadcast and thoroughly stirred into the surface soil. Cotton-seed meal is also a nitrogenous manure, but does not act as quickly as is desirable. Fresh hen manure has about 1.63 per cent nitrogen, 1.54 per cent phosphoric acid and .83 per cent potash; cotton-seed meal, 6.10 per cent nitrogen, 1.45 phosphoric acid, and .88 per cent potash. Barn-yard manure is good enough for strawberries; so are wood ashes, complete high-grade fertilizers, or a combination of bone meal and muriate of potash.

Asparagus and Cauliflower.—M. Y., of Audubon, Iowa, writes: "My old asparagus bed has never received much attention. What shall I do with it? Please tell me how to make and take care of a bed.—What is the best kind of cauliflower seed for a novice to use? How is it raised?"

REPLY BY JOSEPH:—Make a new bed in warm, fairly rich soil. Give each plant plenty of room if you want large, tender shoots. The rows should be not less than four feet (and better five feet) apart, and the plants two feet apart in the rows. Make the ground mellow, and set good, strong, one-year plants in furrows, so the crowns will be from six to eight inches below the surface. Gradually fill the furrows up level with the surface of the ground. Keep clear from weeds, and the surface of ground mellow. Manure well in spring. Cut very few stalks the second season. Third season hill up the rows, and use as wanted. —You cannot grow cauliflower seed. Buy Snowball or Early Erfurt from a reliable seedsman, raise plants early, harden them off well, and set in open ground as soon as this is in working order.

Value of Fertilizer.—J. T., of Smartt, Tenn., writes: "What is the real value of a fertilizer sold here at \$30 per ton, and analyzing, under the guarantee of the state inspector, as follows: Nitrogen equivalent to ammonia, 2 to 3 per cent; water soluble phosphoric acid, 6 to 7 per cent; cit. soluble phosphoric acid, 2 to 3 per cent; total available phosphoric acid, 8 to 10 per cent; phosphoric acid, soluble or insoluble, 1 to 3 per cent; potash (K. O.), 1 to 2 per cent, equivalent to sulphate of potash, 1 1/2 to 3 1/2 per cent.—My grain and corn crops grow plenty of straw or foliage, but little grain. I suppose the fertilizer should be a complete one, with an excess of phosphoric acid?"

REPLY BY JOSEPH:—To head off similar questions in future, I will show in detail how to figure out the lowest value of the fertilizer according to guaranteed analysis, stating, however, that the real value is probably much higher, since all fertilizers, as a rule, contain a higher percentage of plant foods than indicated by the lowest figures of the guaranteed analysis. The problem is as follows:

Nitrogen (equivalent to 2 lbs. ammonia) 2x14-17=1.65 lbs @ 19 cents.....	\$.31.35
Water soluble phosphoric acid, 6 lbs. @ 8 cents.....	.48
Phosphoric acid, soluble in ammonium citrate (reverted) 2 lbs. @ 8c.....	.16
Phosphoric acid insoluble, 1 lb. @ 2c.....	.02
Potash K. O. (equivalent to sulphate of potash 1 1/2 lbs.) 1 lb. @ 6c.....	.06

Total value of 100 lbs.....\$1.0335

Value of fertilizer per ton, 20x1.0335=\$20.67. In all probability, the average value of the plant foods contained in a ton will crowd \$25 pretty closely, and the difference between this and the selling price of \$30 is no more than the usual advance to cover cost of mixing, bagging, handling, and manufacturer's profits. A fertilizer of this kind, being little more than a plain superphosphate, will probably meet your case, and you may use it for grain, corn, millet, etc., at the rate of 200 to 400 pounds per acre, rather in an experimental way at first.

VETERINARY.

Conducted by Dr. H. J. Detmers.

Veterinarian of the Ohio Agricultural Experiment Station, and Professor of Veterinary Surgery in Ohio State University.

To regular subscribers of FARM AND FIRESIDE, answers will be given through these columns free of charge. Where an immediate reply by mail is desired, the applicant should enclose a fee of one dollar, otherwise no attention will be paid to such a request. Inquiries should always contain the writer's full address. Queries must be received at least two weeks before the date of the issue in which the answer is expected. Subscribers may send their veterinary queries directly to Dr. H. J. DETMERS, 35 King Avenue, Columbus, Ohio.

A Cough.—J. W. P., Rochelle, Fla. I have stated repeatedly that coughing is a symptom of nearly every respiratory disorder; hence a symptom, which alone is insufficient to base a diagnosis upon.

Scab in Sheep.—J. W. B., Graysville, Ohio, and F. E. R. New Milton, West Va. Your sheep have scab. A radical cure, vigorous dipping; for palliative treatment, consult a recent issue of this paper.

Thumps in a Mare.—M. B., Harrisburg, Ill. Since the thumps are of long standing—have become a chronic affection—nothing can be done. Light diet, but especially food that is not bulky, may afford a little relief.

Kneesprung.—G. E. M., Reading Centre, N. Y. Since your horse is shaky in his knees, there is no cure. All you can do for him is to see to it that the toe part of his hoofs do not grow too long, and he will not be so apt to stumble.

Lung Disease.—P. H. T., Hatfield, Pa. If your cow has tuberculosis, she is incurable, and it will be dangerous to you and your family to use her milk. If it is not tuberculosis, you will do best to have her at once examined by a competent veterinarian.

Calk Wound.—E. J. S., Southworth, Mont. Clean the wound, see to it that pus and exudation can be discharged, dress the wound twice a day with iodoform and absorbent cotton, keep the foot properly bandaged, and give the animal rest until everything has healed.

Does Not Lie Down.—F., Winesburg, Ohio, writes: "What ails my nine-year-old mare? I think she does not lie down at all. I keep her in a wide stall, and give her plenty of straw bedding."

ANSWER:—Perhaps not anything. Some old mares are not in the habit of lying down.

Pains in the Leg.—C. J. S., Plymouth, Ohio. Such a case requires an examination. It may be that your mare has pains in the feet, or may be that she is affected with ringbone. The sensitiveness in the cap of the hock, or even a capped hock, does not cause the frequent shifting of the weight from one foot upon another.

Founder.—A. R. O., Adrian, Mo. Your colt is foundered, and the soreness is in its feet, inside of the hoof. If the sole of the hoof is very flat or already convex, but the frog good and strong, the animal will go better if shod with bar-shoes. Every good horse-shoer knows how to make them. The time for a cure has passed.

Won't Fatten.—M. E., Mecklenburg, N. C., writes: "I have a Texan pony, about four years old, that won't fatten. I have tried everything that I know of. She never refuses to eat, but will not thrive. What will I do for her?"

ANSWER:—I cannot tell you. Some animals, like some persons, have a tendency to remain thin, in spite of good food.

Sore Neck.—F. M. L., Canton, Kan. In the first place, throw away your pads, which increase the pressure and make the thing worse; secondly, see to it that the collar fits well, and that as little pressure as possible is thrown upon the part that gets sore; and thirdly, keep your horse and your harness scrupulously clean. If you follow the above directions, you will have no further cause to complain.

Bloody Urine.—H. K., Ten Mile, Wis. Bloody urine may have various causes. Hence, since you do not give any particulars, I cannot satisfactorily answer your question, and can only advise you to change food, to feed nothing but what is perfectly sound and free from any mould or mustiness. It may also be necessary to change the water for drinking. Besides that, clean, dry, and well-ventilated premises are also essential.

Lameness.—W. R., Muskegon, Mich. It is utterly impossible to base a diagnosis upon your meagre description. Nearly every lameness in the hind legs is worse when the animal ascends a hill, because by doing so more weight is thrown upon the hind legs. I will say this much: it is very improbable that your diagnosis is correct, and will advise you to direct your attention to the hock joint and its movements.

Arrested Development.—C. L. P., Beaver, Pa., writes: "What would you advise to be done with a colt, rising two years old, that has the testicles still up out of sight? Could he be castrated this spring by a common operator with safety?"

ANSWER:—The most frequent cause is an arrested development. If the animal is not yet two years old, there is yet a possibility that the testicles may descend. If they do not, the operation should not be intrusted to any one who is not thoroughly competent.

Black Leg.—T. T., La Salle, Col. Your calves died of so-called black leg, black quarter, symptomatic anthrax, or malignant oedema. If you have some more calves, remove them to another place. Animals that die of this disease must either be buried sufficiently deep, or be cremated, and the places where they have died must be disinfected. If cases of this disease occur in a pasture, it is always best to remove the surviving animals to another place. If they occur in a stable, the latter must be thoroughly cleaned and be disinfected. Exposed animals may also be protected by a protective inoculation, but that operation must be left to a competent veterinarian.

Recipe for Colic Wanted.—S. H. M., Central Village, Mass., writes: "Please give a recipe for making the powders for horses that have colic."

ANSWER:—I cannot comply with your request. In the first place, you start from an erroneous supposition; secondly, the same treatment will not answer for all cases of colic; and third, it is not the aim of these columns to promote quackery, or to recommend cure-alls or any treatment which, in incompetent hands, is apt to do more harm than good. What is aimed at is to give good, rational advice, or, when the treatment is, or must be, too complicated to be executed by the owner of the animal himself, to induce the latter to consult a competent veterinarian and to leave the treatment to him.

Exostosis.—D. M. L., Crothersville, Ind., writes: "I have a filly which has an enlargement on the inside of the hock joint, caused, I suppose, by a hurt about a year ago. Since that time it has been slowly enlarging. The enlargement is as hard as the bone."

ANSWER:—It may be simply an exostosis, it may be spavin. If the animal is not lame—and you do not say that it is—you may leave it alone, or if you desire to do something, you may rub in once every four or five days a little biniodide of mercury ointment (biniodide of mercury, one part, to lard, sixteen parts). This treatment, probably, will effect some reduction, but may also have the opposite effect.

Worms in Pigs.—T. E. S., Overton, Neb. If you get rid of your present stock of pigs, procure a new lot of healthy, vigorous and thrifty animals, keep them in dry and clean quarters, allow them no access to pools of stagnant water or mud holes, but water them from a good, deep well that receives no drainage from the old pig-pens, and feed them sound and clean food, your troubles will cease. A few grains of santolin (three to five) given with a little milk, for voluntary consumption on an empty stomach, will kill the worms, but it will do no permanent good unless the above conditions are complied with, and an invasion of a new worm brood is prevented.

Old Sores.—R. E. R., Hessville, W. Va., writes: "I have a mare that has some sores on her back of about a year's standing. The sores are about the size of a nickel, with hard scab over them. I think they were caused by tacks in the saddle-pad."

ANSWER:—Remove dead tissues, either by means of the knife or by poulticing a day or two with powdered flaxseed, and then dress the sores with iodoform and a little absorbent cotton on top of it. That the saddle must be changed so that it will not come in contact with the sore places when the rider is in the saddle, may not need any mentioning. It will be best, though, not to ride the animal until the sores have healed.

Lameness Caused by a Kick.—W. C., Olene, Oregon, writes: "I have a mare that got kicked on the stifle, and is very lame. She seems to get stiff when she stands, and she cannot raise this leg very high. There is a lump just below the stifle."

ANSWER:—It is possible that the upper end of the tibia has been seriously injured, or even been fractured by the kick. If the lump, as you call it, is hard and solid like bone, hardly anything can be done, only the size of the callous may possibly be somewhat reduced by repeated applications of iodine preparations, such as tincture of iodine, or an ointment of biniodide of mercury, 1:24, but they will not remove the lameness.

Lameness.—T. S. M., Springview, Neb. I cannot tell you what to do for your mare, because your description fails to indicate the seat and the nature of the lameness; and although you seem to think that the seat of the lameness is in the shoulder, the only reason you advance in support of your opinion does not prove anything. Almost any horse will flinch if pressed upon the shoulder joint, especially if that experiment is quite often repeated. Besides that, lameness in the shoulder joint is not a frequent occurrence. I advise you to commence your examination with the foot, make it in a thorough manner, and if no abnormal condition is found in the foot, to proceed a little higher, and you may succeed in finding the right place.

Several Questions.—L. H. B., Odessa, N. Y., writes: "What does losing a cow's cud, mean?—What is hollow horn?—Will hen-lie get on cows and remain any length of time?"

ANSWER:—If cattle suffer from any disease of the digestive apparatus, which interferes with the moving on of the contents of the digestive canal, but especially with those of the paunch, they cease to ruminate, and then some persons who do not know any better, say, or may possibly even believe, that the cattle have lost their cud, and cannot find it again. —As to your second question, there is no such a disease, nor is there any disease to which that term "hollow horn" might be meaningfully applied. It is frequently used, though, to cover ignorance. —In regard to your third question, hen-lie may not remain very long on cattle, but if lousy chickens have access to the cow-stable, or are allowed to roost above the cows, the latter may get every day a fresh supply.

Puerperal Fever.—A. M., Lonaconing, Md. Your cow died of puerperal fever, or, as some call it, parturient apoplexy, a septic disease, caused by an absorption of septic bacteria through the uterus. Since you have another cow coming in, it will be advisable to subject your stable to a thorough cleaning and disinfection, to feed your cow not too high—that is, to keep her on light diet—until the calf is two or three weeks old, and after delivery to leave her calf with her for the same length of time. If in spite of this the second cow should contract the same disease, you may save her if you inject into her uterus, very carefully, of course, half a gallon of a blood-warm solution of corrosive sublimate, 1:1500, or about one scruple to half a gallon of water, as soon as the first symptoms make their appearance. At the same time the animal must be kept quiet, must not be irritated by anybody, must have her calf with her, must be protected against draft, and be made comfortable. Frequent milking, say once every hour, even if the efforts to get any milk at all are apparently in vain, also is useful. Internal medicines, as a rule, are useless.

Lameness.—J. C. L., Elizabethtown, Ind. writes: "My mare has been lame for more than a year. When standing she puts the front foot or leg in which she is lame considerably forward of the other, and sometimes, after stirring around more than usual, she will rest her foot on the toe. When she steps on anything so as to throw the toe higher than the heel, she will limp more than usual. In turning her around from one side to the other, she will more readily throw the lame foot under her than she will allow it to extend out sideways."

ANSWER:—Your mare either has navicular disease, or the seat of the lameness is in the flexor tendons and suspensory ligament below the knee. There is nothing the matter with the shoulder. If it is navicular disease, you will probably find the hoof of the lame foot somewhat smaller, and the heel of the same somewhat more contracted than that of the healthy foot; and if the lameness is due to an overstraining of the flexor tendons, or of the suspensory ligament, you will find those parts somewhat swollen, and, may be, somewhat painful if touched or gently pinched.

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Read our liberal offer of the Atlas, on page 235.

Our Fireside.

MY OLD-FASHIONED GIRL.

As the clock on the stairs ticks the minutes away
I sit with my pipe at the close of the day,
And in the light smoke-wreaths that softly arise
Are numberless visions in fanciful guise.
In sun-bonnet olden I dreamily see
Two roguish blue eyes glancing shyly at me,
The incense arises in one lazy curl,
Enframing the face of my old-fashioned girl.

LOOK once again in her soft, azure eyes—
Live over our meetings 'neath June's tender skies
As we strolled side by side down some shadowy lane,
Or skirted the acres of ripening grain,
While if I but hearken, I hear even yet
Her fairy-like steps in a dim minuets,
And there comes from the smoke in a delicate whirl,
The willowy form of my old-fashioned girl.

HEAR the sweet voice that I heard years ago,
And her hand touches mine as we pass to and fro,
When we meet for an instant in old Money Minsk,
Or I tenderly clasp it at midsummer's dusk,
And each haunting vision in fragrant disguise
Grows fainter and fainter and finally dies,
Yet one face is left me, as pure as a pearl,
The face of my darling—my old-fashioned girl.

Is the sweet little miss who climbs up on my knee
To "kiss grandpa good-night" there is something
I see,
Unseen by all others, deep down in her eyes—
A something within them that half hidden lies;
She wonders, perhaps, why I hold her small hand,
But if I should tell her she'd not understand
That grandmother, yonder, beyond the smoke's curl,
Was once, and to-day is, my old-fashioned girl.
—F. H. Curtiss, in *Good Housekeeping*.

A CRISIS OF FATE.

BY MIRIAM A. MERRICK.

STERN winter reigned supreme.
Early had the monarch of the
year assumed his regal power,
spreading o'er nature his wintry
armor. Mountain and valley
were clothed in helmets of frost
and draperies of snow, while
torrent, lake and river were
silenced by his icy seal.

Let us turn our eyes from
nature in the court-dress of
her sovereign, lying so cold and
passive at his feet, to the inviting boudoir of
an old English home, where a bright fire dif-
fuses a genial warmth and cheer, before which
is seated a stately matron of some fifty years,
perchance. There was a calmness, almost
coldness, in the proud face, a sadness in the
eyes, and yet beneath all there throbbed a
mother's loving, loyal heart.

Near by, with his head bowed upon his
hands, sat the cherished son of this stately,
English mother. A painful silence that pre-
vailed for some moments was at last broken
by the mother saying, in tender, anxious
tones:

"Harold, my son, beware, I beseech you! Do
not act impulsively or rashly, but patiently
consider the step you contemplate taking. I
fear leaving home in this manner will cast a
barrier across your path, should you ever de-
sire to return to your home—to your mother.
By this departure you become self-exiled in a
strange, a far-off land—a land so much unlike
your own, beautiful, beloved England."

At the sound of his mother's voice, Harold
Norwood's dark eyes were raised to the sweet,
patient face, as he responded with trembling
accents:

"Mother, dear mother, have I not long and
calmly meditated upon this step? Have I not
long and patiently suffered this cruel injustice,
these causeless insults? Oh, would you, my
own, dear mother, seek longer to chain me to
this daily crucifixion of ambition, aspiration
and pride? No, no, my own, loving mother.
Give me your blessing and bid me depart to an
atmosphere more wholesome, to influences
more congenial. Because I dared to betray the
least independence; because I would not ex-
tinguish the little spark of genius heaven lit
in my soul; because I rebelled against unjust
accusations and mandates, I became the sub-
ject of persecutions and passionate abuse from
one whom my infant lips had been taught to
call father. Thank heaven," fervently added
the youth, "father in name only."

Aroused by a fresh remembrance of injus-
tice, Harold again broke forth vehemently:

"This man's son, his favorite, is discovered
implicated in a disgraceful, dishonorable trans-
action. To shield him, I am sacrificed, I am
branded as a culprit; upon my innocent head
the burden of disgrace falls, and my heart is
wounded and embittered with a sense of this
great wrong."

This eloquent appeal was not lost upon the
fond mother. The moment her son ceased
speaking, Lady Randolph, in tearful tones,
cried:

"No, no, my noble son, I will not seek longer
to blind you even by chords of love to a life so
distasteful, in a bondage so cruel. Go, go,
Harold, my son, while I have courage to bid
you depart. Go, though it break my heart to
say farewell. God forbid, Harold, my son, that
I should prevent your life from putting on its
appointed glory."

These were the last words of the fond
mother, as with breaking heart she pressed

the last kiss upon the pale brow of her exiled
son. Reader, we will spare you the anguish
of this sad parting. A grief so sacred is not
for mortal eyes.

Sir Herbet Randolph was a selfish, passionate
man, and there can certainly be no reliance
placed in physiognomy or physiognomy, and no
determinate relation between the internal and
external, if his peculiar face did not portray
combative nature. A regular, fighting nose,
strong jaws that suggested masticatory power
and allied him to the carnivora, adorned Sir
Herbet's physiognomy. He was, indeed, more
or less warped in all directions.

Importance has always been attached to the
manner in which a man's ears are set upon
his head. No mark of Sir Herbet was more
perfectly defined than the peculiar way in
which his illy-shaped ears were appended to
his head. There is also much significance in a
man's mode of shaking hands, and when Sir
Herbet presented his flabby hand without
energy, one was instantly chilled with the
negative influence imparted, and felt like they
were clasping the inanimate hand of a corpse.

A burly man was Sir Herbet, with a ponder-
ous, blustering nature, having far more affec-
tion for the luxuries of his table and his dogs
than he entertained for the entire remainder
of his household, unless a slight reservation
should be made for a son, by a former wife,
who was the fac simile of his father in every
respect.

It had always been, and was likely to remain,
an unsolved enigma how a woman of Lady
Randolph's intelligence and refinement had
ever been wooed and won by such a human
monstrosity as Sir Herbet.

Harold Norwood, Lady Randolph's son by a
former husband, inherited his mother's re-
fined, sensitive nature, and was, unfortun-
ately, evermore provoking Sir Herbet's displeas-
ure, his last and unpardonable offense having
been a modest declaration of independence.

The whisperings of genius that had long
echoed through our young hero's soul refused
longer to remain in silent subjection, and
breaking the fetters of fear that had so long
bound him, Harold declared his predilection
in the choice of a profession. This bold stroke
brought on a crisis in the youth's hitherto
quiet, uneventful life—a crisis demanding
firm resolution and prompt action.

Reader, have you watched the dark gloam-
ing of a thunder cloud ere it burst in its wild
fury upon nature? If so, you may form a
faint conception of Sir Herbet's gathering
wrath when Harold, the hitherto model of
submission and obedience, calmly, yet de-
cidedly, declared his intention of prosecuting
his studies in art.

While the youthful aspirant firmly, yet
modestly, proclaimed his plans for the future,
the amazed, irate father stood glaring upon
him like some ravenous beast, ready to spring
upon his prey. The fire of passion that had
been gathering for some moments suddenly
burst forth in bitter imprecations, until the
very atmosphere seemed charged with curses.

"So, sir, you have dared to oppose my will,
dared to thrust aside my authority, dared to
defy me, your rightful guardian, and choose to
become a vagabond artist?" cried Sir Herbet.
"Begone from my presence," stormed the
passion-swayed man. "Do you imagine your
self-imagined genius will sustain you in idleness
in a strange land, when you have ex-
hausted the means your foolishly-indulgent
mother will provide you with? When you
have been jeered at and scorned for your
idiotic dream, then you'll come slinking back
like a starved hound, thinking to repeat the
sacred drama of the prodigal son. Then, in-
deed, you may go fill yourself with husks, or
die of starvation, for aught I care. Begone,
you miserable ingrate! Never again shall you
enter these doors."

We will not shock the reader with a further
repetition of this heartless abuse. The re-
straint Harold maintained, the mask of com-
posure he had worn throughout this tirade,
may have silenced these passionate denuncia-
tions for a time, giving Harold the opportunity
to say:

"Father, had I wronged, dishonored or dis-
graced you I would patiently bow at your feet
and implore your pardon. I have been taught
by my mother to call you father, to obey and
honor you. Will you not give me one kind
word, one word of cheer before we part, it
may be, forever?"

"Hush your infernal sentimentality, you
miserable fool," returned Sir Herbet, as he
evidently struggled between an impulse to
resort to muscular argument or the equally
impolitic determination to crush the youth
with a fresh torrent of abuse.

It required a heroism of no ordinary type for
one of Harold Norwood's proud, sensitive
spirit thus silently to suffer this unprovoked
answer. But there is an Olympus in every
noble soul, and into this serene height, above
the strata where passion and conflict reign,
the brave youth was borne.

While patient suffering lay in the depth of
the dark eyes raised to the face of the man
that continued to rave like the wild tumult of
an unchained mountain stream, there came
soothingly to poor Harold, like the soft
murmur of a meadow brook, the parting
benediction of his mother. Once more turning
his eyes upon the tempestuous face, Harold

said: "Father, the broad gates of possibilities
seem to beckon me. Should they open wide
as I advance, and in time I should attain
success, and should I return wearing honestly-
earned laurels, would you not welcome me
back to my native home?"

Sir Herbet turned upon the pleading youth
a look betokening something more than baste,
cursing him for a fool, a stupid dreamer, with
oaths that burned into the sensitive heart,
leaving wounds that time could not heal, and
scars that would never be effaced.

Raising his hand as if to ward off a blow,
Harold stole forth into the silence and gloom
of the chilly night, an exile from the home of
his birth. Walking away slowly, with head
bowed down for a few steps, he paused and
turned his tear-dimmed eyes once more upon
the dear, old home; up to the ivy-covered
tower, upon the moonbeams breaking through
the faint wreath of silvery smoke and playing
upon the window from whence his mother
was wont in other years to watch his childhood
sports.

What mingled emotions crowded upon poor
Harold's lonely heart! Driven from the home
of his birth, with the curses of him he had
been taught to honor as a father resting upon
him, he turned away to the path leading to
the stables. As he reached their entrance he
was greeted with the gentle neigh of his
favorite. With glancing eye and quivering
ear, the beautiful creature welcomed her young
master. Harold, approaching the animal,
bowed his head upon her gracefully-arched
neck and stroked the silken mane, wherein so
oft he'd wreathed his hand as he sprang into
the saddle.

"Good-by, good Phyllis," said the young
master, in a tremulous voice. "We've had
many a gallop o'er hill and dale, but now must
part. Stranger hands will guide you, faithful
Phyllis."

Something strangely resembling a sob
choked further utterance as Harold hurried
away, springing lightly into a cart, where the
faithful, old servant that had been his own
father's valet waited to drive his young
master to the station.

Hurriedly passing through the beautiful
grounds, to-night crowded with phantoms of
departed joys, the poor prodigal soon reached
the deserted highway. As the last glimpse of
the dear, old home faded from his sight, the
bell from a neighboring tower pealed forth the
knell of a dead day of a dying year.

To Harold Norwood the old life, with its
cruel injustice and persecutions, was forever
banished in the past, from whose shadows he
stepped forth into a dawn of hope and promise
beautiful and golden. A new world, new life,
new influences awaited him beyond the sea.
To the youthful exile "old things have passed
away; behold, all things have become new."

The station was soon reached, from which he
was to take a train to the port from whence he
should sail, on the morrow, for "the land of
the free and the home of the brave." After a
sad parting with the faithful, white-haired
sergent, Harold was cut loose from all his
youthful associations to battle his way to fame
and fortune in a land unknown, or sink into
ignominy.

We will not detain the readers with the inci-
dents of an uneventful voyage, but once more
introduce our young hero in a modest little
studio in a pleasant, quiet locality in the city
of Washington, where he had passed months
of toil; yet, still like an ignis fatuus, hope
beckoned him on to the grand possibilities his
ardent soul painted on the canvas of the
magic future. One moment success, victory,
seemed within his grasp, yet, as he put forth
his eager hand to grasp it, a Tantalus-like ill
wind swept it beyond his reach.

What sunbeams amid the shadows, what a
tonic against despair in these days of soul-
testing discouragements were his mother's
letters from over the sea! These sweet
evangelists wafted across the deep from the heart
and hand of a loyal, loving mother shielded
him from temptation, saved him from despair.

One day, when the gloom seemed the deepest,
in a desperate mood Harold threw aside his
brushes and palette, exchanged his blouse for a
neat street attire, and sallied forth, so despond-
ent, so miserable, that he prayed secretly that
some sudden revolution of fortune would cast
him beneath a more propitious star or beneath
the dark waves of oblivion.

In this abandoned, reckless mood, he was
sauntering along one of the crowded thorough-
fares of the great city, when he was suddenly
startled by the shrill voice of a street wail
crying:

"A runaway! a runaway!"

Quickly glancing up he saw, madly dashing
down the street, a pair of horses attached to a
coupe. Like a death-dealing tempest they
came in their mad fury. Another moment
and they would be upon the track upon which
an express train was now approaching at
lightning speed.

At a glance, Harold grasped the terrible
situation, with all its horrible possibilities,
and rashly leaping before the frantic steeds,
with wide-extended arms, stood bravely (to
the horrified bystanders, it seemed) waiting to
embrace death. In an instant the intelligent
animals seemed to recognize a master spirit,
and obeyed, checking up so suddenly they
threw the driver violently to the ground.

A crowd quickly gathered about the coupe,
and on every hand could be heard expressions
of admiration for the young hero who had
bravely periled his own life for the salvation
of the occupants of the vehicle.

Presently, a gentleman of decidedly military
bearing, with gray hair, descended from the
coupe, and approaching Harold, grasped his
hand, saying, in a voice trembling with
emotion:

"My brave, my noble young friend, how
shall I ever, ever recompense you for this
heroic deed, this deliverance from death?
Come with me," continued the grateful man,
taking Harold's arm and escorting him to the
vehicle, where he opened the door, saying:

"This is my daughter, impatient to see and
thank her deliverer from a death so terrible."

A young girl of marvelous beauty, still pale
and trembling with fright, reached forth her
hand, saying:

"Oh, sir, words, could I command them,
would be a mockery at this moment. Years
of kindest deeds will never recompense your
unselfishness."

"Eyes," says Emerson, "speak all languages,
and wait for no introduction." These eyes,
betraying the deep gratitude of the heart, now
fixed upon Harold's flushing face, were bewil-
deringly expressive, as a mist of grateful tears
veiled their rare beauty and brightness. These
were the eyes of the young artist's dreams—
eyes that caught love in his own wiles.

"Come, come!" said Major Burleigh, abrupt-
ly, "I see but one way of escape from this
embarrassment; our young, newly-made friend
must take a seat in the coupe and go with us
home to lunch, where we can more privately,
deliberately discuss the affair."

An appealing look from the daughter's eyes
was the prevailing argument, overcoming all
modest reluctance or resistance that might
have existed on Harold's part against the
propriety of accepting the major's invitation.

Seating himself beside the fair girl, the
rescuer and the rescued were soon chatting
merrily as they glided over the smooth streets;
and in what seemed to Harold a wondrously
brief period, the carriage was drawn up before
one of the stately residences in a highly
aristocratic locality of the capital.

The major led the way to the library, declar-
ing to Harold this was his favorite nook,
where only those who in some way had found
entrance to his heart were welcomed.

Acknowledging the compliment gracefully,
Harold was soon comfortably seated in an
easy chair, amid sumptuous surroundings,
and feeling really more at home than he had
since arriving in Washington. Here was a
home, indeed, whose every appointment
charmed the eye and gratified the young
artist's refined taste.

Miss Burleigh, requesting to be excused, said
to Harold, on leaving the room:

"Should papa become dull company before I
return, Mr. Norwood, you will find some en-
gravings upon your table—scenes from your
native land, which you may find pleasure in
glancing at. By the way," continued the fair
girl, taking a step nearer the guest, "your
heroic deed of the morning has in a measure
destroyed a prejudice I have hitherto enter-
tained of the English."

"If the prejudice was unfavorable, I certainly
congratulate myself."

"While I blush I must acknowledge ignor-
ance, in a goodly measure, of a personal
knowledge of English character. In the first
place, I imagined nothing ordinary could excite
or arouse an Englishman; that as a race, you
were cold, reserved, inflexible and supremely
selfish, seldom able to adapt yourselves to
circumstances."

"Indeed, Miss Burleigh," returned the artist,
"while I deeply mourn the accident that placed
your life in such peril, I shall be gratified
should it prove a disguised blessing, obliterat-
ing such ungenerous sentiments from the
mind of one whose respect I would crave. I
have heard many unjust criticisms upon my
country and countrymen since my sojourn in
America."

"I think my prejudices were largely founded
upon a story I heard in childhood, of an
Englishman who stood calmly and unmoved
upon the margin of a stream, looking upon the
frantic efforts of a drowning man to save him-
self. A Frenchman happening along rushed
up crying to the Englishman, 'Why don't you
save the poor creature?' And the English-
man remarked, with cool dignity, 'Sir, I have
never had an introduction to the gentleman.'"

While evidently amused at the story, Harold
spiritedly replied:

"While I admit we are not an impulsive
people, the story reflects ungenerously upon
our humanity, upon our nobility of soul."

"Your heroic self-forgetfulness, your brave
interposition in our behalf, has redeemed the
whole English nation in my eyes, and I pray
you to pardon me for any unfavorable fancy I
might have entertained in my past ignorance,"
returned Hortense Burleigh, with a smile that
destroyed the least and last resentment that
might have lay hidden in Harold Norwood's
heart.

With a voice and glance full of kindest
emotion, the young Englishman said:

"May you in time, Miss Burleigh, discover as
little to dislike in your British mother, and as
much to admire and honor, as she finds in her
American daughter."

The refusal of the check was couched in

you here to discuss. I have conceived the peculiar fancy to have my daughter's portrait, painted life size. I would like the sittings to take place in her boudoir; indeed, I would like certain appointments of the apartment to appear in the picture. Remember, I don't demand a beautiful picture, but life-like."

And yet in vain Constance Lelcheste sought
to draw away from this shrine this meek and
hidden worshiper. Be patient, devout heart;
love's warm buds are bishshing 'mid thy laurels
—laurels awatling thee, thou patient, suffering
toiler. The envied crown may appear in lonely
glory a weary, chilling welght; be patient, and

[Concluded in next issue.]

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Our Household.

SINCE THE BABY DIED.

THE home has been so strangely still
Since the baby died.
The birds no longer seem to trill
Since the baby died.
The sunshine's gone and shades of gloom
Lurk in the corners of the room;
The roses have a fainter bloom
Since the baby died.
The stars seem brighter than before
Since the baby died.
We're nearer to the other shore
Since the baby died.
"Not in his anger, but in love,"
Not as an eagle, but a dove;
There's less below and more above
Since the baby died.

HOME TOPICS.

LEMON CUSTARD.—A nice dessert for early spring, before berries are ripe, and after one is tired of pies and hot puddings, may be made with two lemons, six eggs, three teacupfuls of sugar, a tablespoonful of butter, five tablespoonfuls of corn starch and four teacupfuls of water.

Roll the lemons, then grate off the outside rind and press out the juice. Add the grated rind and the juice to the water, and put it on the stove in a bright tin or granite iron sauce-pan. Stir the butter into the sugar, add the beaten yolks of the eggs and stir all well together; over this pour the hot water and lemon juice, stirring it all the time. Return it to the sauce-pan and set it on the stove.

Dissolve the corn starch in a little cold water, and as soon as the other mixture is ready to boil, stir in the corn starch, and lastly, after taking it from the fire, stir in the whites of the eggs, beaten to a stiff froth. Make this custard in the morning and set it in a cool place until dinner time. Some people prefer it served without any sauce, but I think sweet cream improves it.

MONEY MAKING AT HOME.—In many instances, it is desirable, and sometimes necessary, for women to be able to earn money, who cannot leave the home roof to engage in any occupation. Children, too, can sometimes make their own spending money, and learn habits of industry at the same time.

Pigeons and squabs always sell well, and do not cost much in trouble or expense to rear them after you once get started. If you commence with only one or two pairs, you will soon have a flock, as they breed every month; two each time.

Be sure and keep your pigeon-house clean and sweet, as it does not pay to keep pigeons, or in fact, poultry of any kind, unless they are well taken care of. In attempting anything of this kind, go about it systematically. Keep an account of all you buy in the way of stock or feed,

he makes enough to clothe himself and what little spending money he needs besides.

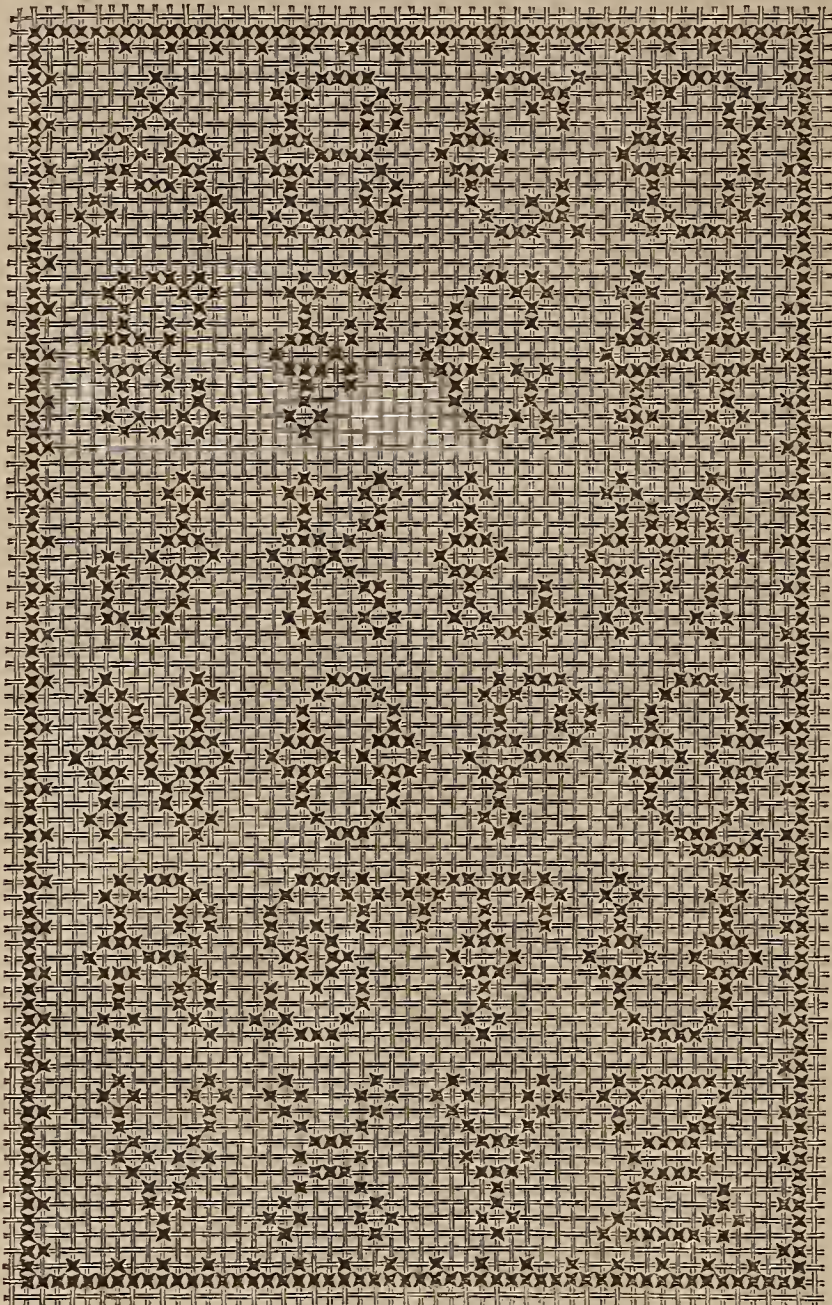
Too often, if a farmer's daughter wishes to earn something for herself, she thinks she must be a teacher, or go to the city to work in a store or office, to run a sewing machine or a type-writer. It would be much better if she could find some paying employment under the home roof.

Bee keeping, fruit growing, gardening and flower raising have all been tried and

When you sell spring chickens, see to it that no last spring's chicken is among them. If you exercise the same care in everything, your reputation will soon be established and you will find ready sale for everything you offer. MAIDA McL.

CROSS-STITCH SAMPLERS.

When I was quite a little girl, some one brought in a sampler done in their little childhood. I was so delighted with it that I straightway made one myself.



CROSS-STITCH ALPHABET.

I was a quiet child and liked my ucedle, and have found much of that work of value to me all through life.

The sampler was a square of the width of the canvas. The cut edges were neatly hemmed, and around all of it a neat border worked in purple, single zephyr. That was a pet color in those days.

All my spare pennies were saved for a skein of zephyr at the worsted store. Then the spaces were counted off, and

about anything marked; then it seemed to belong more especially to you.

Cross-stitch embroidery is being revived again, and is used so much for decorating little girls' gingham dresses that we give the letters and a few patterns with this issue.

In making dresses, use the French gingham or the even-blocked, cross-barred muslin. Aprons worked in the same way are much worn.

If you wish to use it upon a solid color, like dark blue gingham or black lustre, baste a piece of canvas on the goods, work your pattern upon it, taking care not to catch into the threads of the canvas. When finished, pull out all the canvas threads. Cut them in short lengths, so it will not make your work askew to remove them.

The letters of one's own name it is best to memorize, so you need not be entirely dependent upon the pattern.

CHRISTIE IRVING.

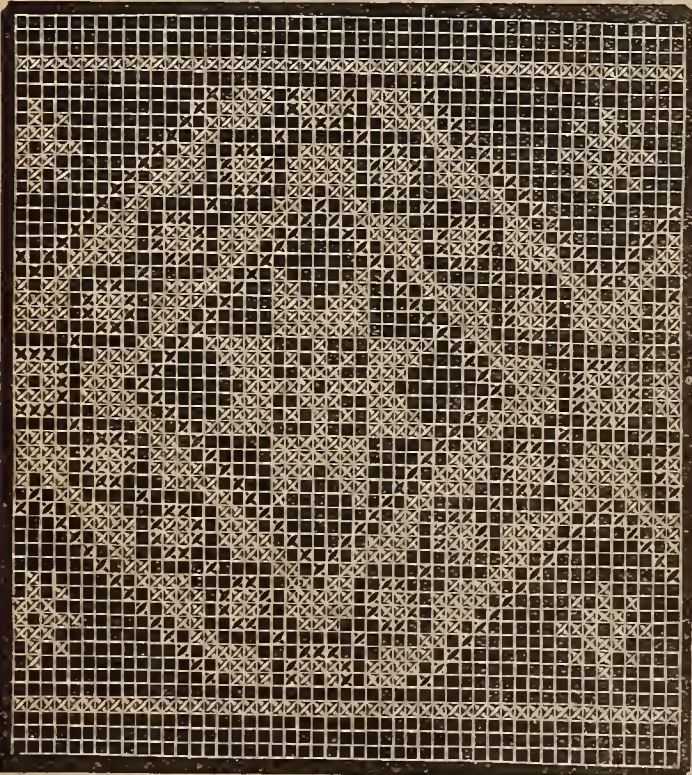
A DIVISION OF LABOR.

"Mary, there's something I want to talk to you about, but I fear I'll offend you, though I am sure no offence is intended."

"Why, aunt, you surely do not think I'd get offended at what you mean to be for my own good? I shall be only too glad to listen to any suggestions you care to make, for I apprehend that what you want to say relates to my household management. Now doesn't it, Aunt Sarah?"

"Yes, it does. You know I shall be going home next week. I can tell you what I wish to say so much easier than I can write it, and I must say it to ease my mind and my conscience. Tell me truly, do you think you manage your work so as to make it as easy for all as you can? You do think so? I don't. Now, let me explain. There's yourself, Kathie and Sue, three women, yet it seems to me you are always busy. For one thing, you are constantly running against each other. How? Why, haven't you noticed it? Now, this morning, for instance, Kathie went to strain the milk, and directly after you followed her, not knowing she was there, of course. I heard you say, 'Why, Kathie, I meant to 'tend to that.' Again, this morning, too, Sue had the dish-water all ready and stepped outdoors a minute; along came Katie and began washing the dishes. When Sue came in she said, 'Now, Kathie, I'm going to do that; you do something else.' After awhile I heard Sue wondering if Kathie had made the beds. She went to see about it and found her just attending to that. Then I heard you wondering if any one had dusted the sitting-room. Yesterday, the bed-room work upstairs wasn't done all day, because each of you supposed the other had attended to it. Now, you don't notice this at all, but it is quickly noted by a visitor.

"Now, why not have a division of labor?



CROSS-STITCH EMBROIDERY.

and also of all your sales, and if the credit side does not average the most, you are making a mistake somewhere.

I know one boy who lives in a village and has only a small back yard, who bought wire netting, with which he partitioned off and covered a yard for his pigeons. He started with one pair, and now keeps a flock of thirty, from which

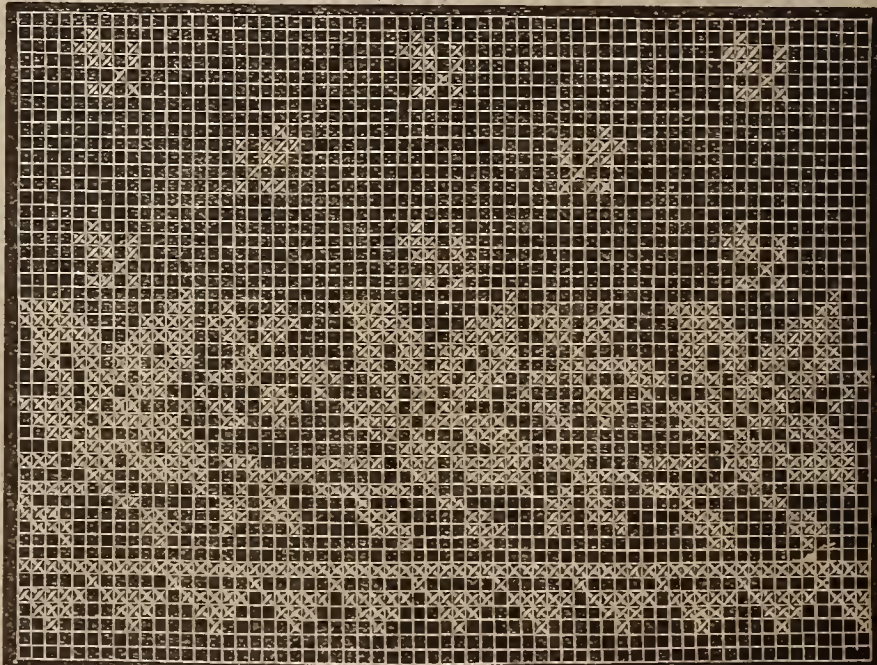
made profitable by women. Some will say the work is too hard for women, but she does not need to do all of it herself.

Nearly all men who are successful gardeners or fruit growers, employ help to do the work, and so may a woman. A woman is no more liable to be hurt by outdoor work than by indoor; in fact, she can stand more work in the open air than in a kitchen, school-room, store or office. There may be more wear and tear on the clothing, but there will be infinitely less on the nerves.

There is always sale for anything good to eat, and many families in all the large cities would be glad to pay a good price for home-made jams, jellies, pickles, catsups, sausage, mince meat, etc. With a little effort, one could secure regular customers for such things as well as for butter and eggs, which are often sold direct to the consumer. Make a first-class article of any or all of the things mentioned; put your name

or trade mark on it; be very careful that the quality is uniformly good, and there will be no trouble about a market for all you have to sell.

If you have eggs to sell, sort them and put those of uniform size together. Be very careful to have them all clean, and never allow one in the lot that you are not sure is perfectly fresh.



CROSS-STITCH EMBROIDERY.

the letters of the alphabet nicely worked in all sorts of colors.

I should now prefer all one color. I was so little that in this way I learned my letters. Times without number have those letters been of benefit to me in marking clothes, towels and table-linen since.

Somehow, there was always a charm

You do a certain part and let each of the girls do a certain part. Why couldn't you attend to the milk and chickens and over-seeing, and let Kathie do the bed-room work and sweeping and dusting one week, while Sue does the kitchen work and cooking? Next week let them change, Sue doing Kathie's work. Both helping in the laundry work. I notice, too, that you

have no regular time for cleaning the lamps. Now (I'm advising you all along from my own experience), why not let the girl who does the kitchen work take care of the lamps? Have her clean them immediately after breakfast, then, whatever occurs, the lamps are clean. At first, this may seem like a great deal of trouble, but when once you get into the habit of doing your work like this I'm quite sure you will like my plan best. You will find your household machinery running ever so much smoother. There will be no inquiry whether this or that has been done. No getting in each other's way.

"I'm a strong advocate of system in housework. In some houses it cannot always be carried out, but in yours it can. And you'll find it will pay, too. I had two daughters, and it was a long time before I adopted the plan I have advised for you. If I'd only known how much better it was for all I'd have thought it out long before. You see, this way gives both girls a chance to learn housework and cookery. There, girls, the lecture's over. Pass around the hat and give the poor woman a dime."

"Aunt Sarah, you've told me the very things I wanted to know, but I'm so diffident I was afraid and ashamed to ask you. It seems I ought to have thought of this, way long ago, if not for myself, for the girls, but I never did, and perhaps never would have done so. I thank you, and I know Sue and Kathie do, too, if for nothing else, because 'Aunt Sarah said so.'"

"Indeed we do, mamma."
"Then I can learn to cook as well as Kathie, can't I, mamma?" said bright-eyed Sue. And she did. ELZA RENAN.

A BIRD AIR-CASTLE.

This article is for the girls who do useless fancy work. That is, if they are not each one at their wits' end trying to follow all of the advice given them in the different domestic journals. First, comes some stately sister, who talks in a dignified way of the wickedness of spending our time making useless ornaments, when we ought to be resting or developing our intellectual bumps by taking a Chautauqua course. Then another sister springs up and tells deft fingers how to make some bewitchingly pretty trifle, until we poor women, who want to please everybody, are at a loss what to do. I notice that these self-same women who talk of wasted time and undeveloped minds advocate the piecing of calico quilts and the knitting of lace, which is the most foolish waste of time and eyesight that can be thought of.

There, now, I am telling, in an underhand sort of way, what not to do, when I did not mean to at all. I want every one to knit lace that wants to, if they will let me buy mine at three cents per yard. I like work that takes but little time for its completion—something that I can sit down and finish off in a day or two. I want quick returns for labor expended.

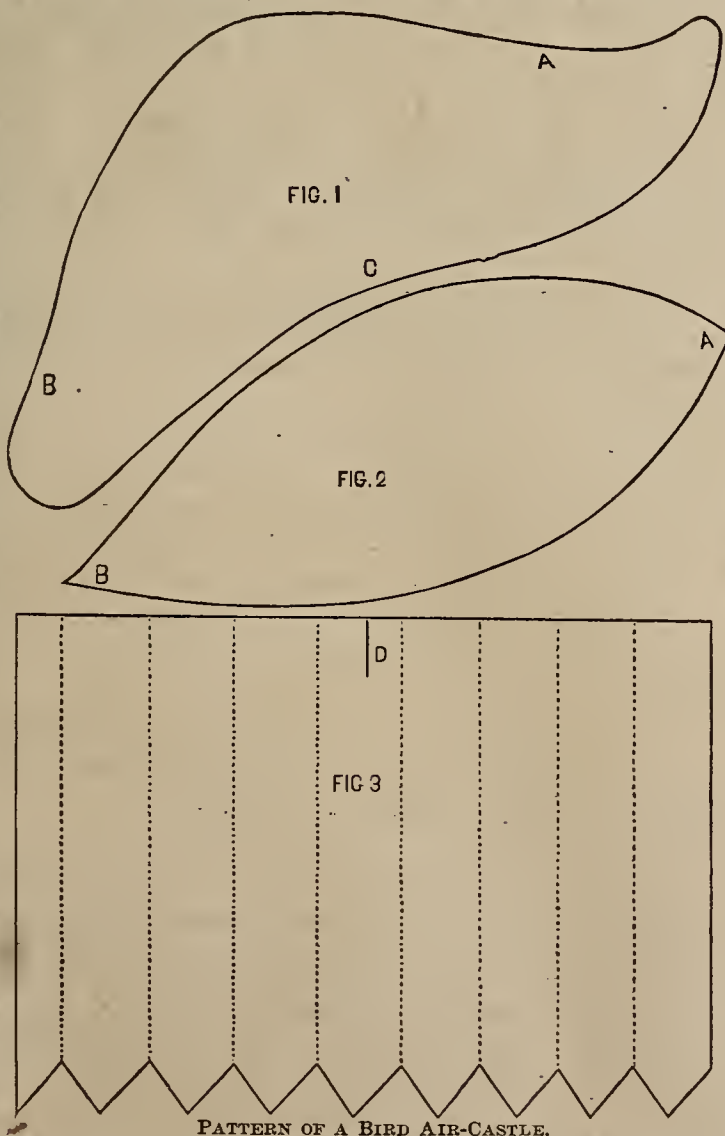
Now, girls, while you are deciding this momentous question, I will tell you of a way to use up those silk scraps left from your last crazy quilt. If you have never seen a bird air-castle, you can have no idea of their beauty.

The materials necessary are black, yellow, blue and red silk, velvet or plush. A small quantity each of gilt, silver and black paper, hoop-skirt wire, wadding and small, black beads for eyes. The body of the bird is cut by patterns Figs. 1 and 2. Cut two pieces like Fig. 1. Sew them together from A over the back and around

to B. Then sew Fig. 2, which is the breast and of a different color, into the opening, leaving a small place to turn the work. Turn, stuff with wadding and sew up neatly. Make four birds. One black with red breast, black wings and tail (cut from paper, Fig. 3). One blue with silver trimmings. One yellow with black breast and tuft, gilt wings, and one gray with yellow and silver. I am thus explicit, as the niceness of the work when done depends greatly on the coloring. Make the tufts of embroidery, silk or of silk ravelings, and sew onto the tops of the heads. Sew on the beads for eyes, cut a small, three-cornered piece of the paper and paste on for the beaks, doubling it together to a point. Cut the tails from the different papers and fold together by the notches, like a fan. Cut a small slit in the center of the opposite side, D, and sew to the bird, one half being sewed to each side. If sewed on right it will spread out like a fan. Cut the wings by the same pattern, only two notches smaller. Sew one to each side at C, and your birds are finished. Now, to mount them, make four circles of the wire, measuring twelve inches after they are fastened together, wind them with gilt paper, sew a bird in each ring. Then make a larger circle measuring twenty-four inches. Fasten a fine thread to each small ring, then fasten three of them at equal distances apart to the large circle, leaving two inches of thread between the small circles and the large one. Bring the three threads together at the top to hang up by. Also the thread from the fourth bird and ring, which is to hang in the center of large circle. Tie all the threads together in a knot around a carpet-tack and drive the tack up into the ceiling. Be sure to have them hang evenly. They are always in motion when there is the least bit of air in the room, and as the visitors say, "They are just as cute as they can be." Brown tissue paper owls, that have become so popular in the past year, can be mounted in the same manner. FANNY FLETCHER.

PUTTING UP MEAT.

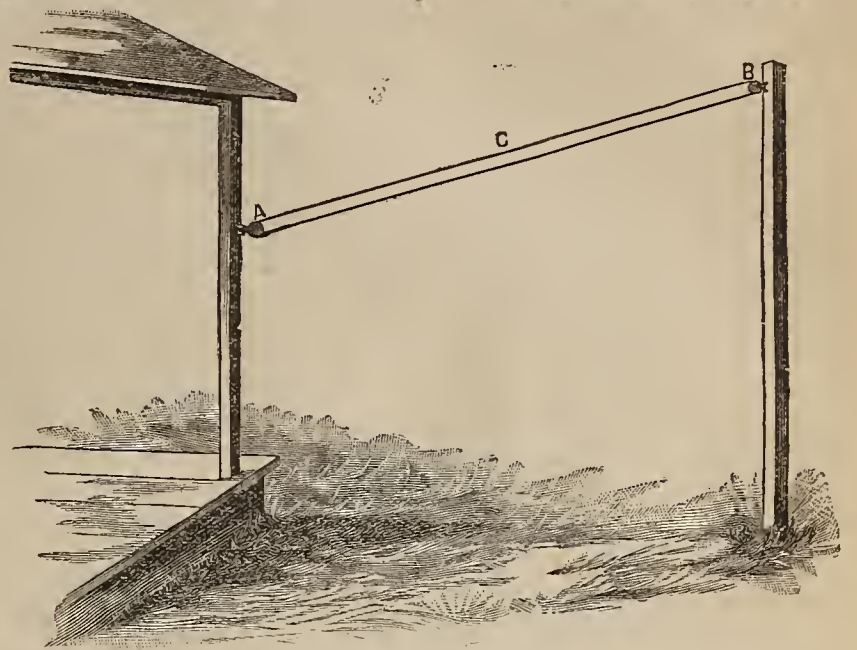
I have been a subscriber to FARM AND FIRESIDE for years, and have watched the



PATTERN OF A BIRD AIR-CASTLE.

household columns closely, but have not yet seen directions for putting up meat, so will give the sisters my way. I am a little late in the season, but still it may benefit some one. In our neighborhood almost every farmer has his own beef to kill every winter, and such a winter as this has been with us, it must be put up in some shape or other to keep. The large pieces we boil and roast nicely. Remove

all the bones you can. Use plenty of salt, a little pepper, then pack closely in stone or tin vessels. Stone crocks are the best. Pour hot lard over it all. Keep in a cool place. If put up right, it is just as good in harvest as fresh meat. Pour water in your pans and seal the gravy boiling hot in glass jars, or you will have no brown



A CONVENIENT CLOTHES-LINE.

gravy when you take your meat out to use. Pork, spareribs and backbones are put up in the same way. You can also can meat with success. Cut in small pieces to put in glass jars, boil and fry a nice brown, not too soft, pour water on enough, for the juice must cover it, put in glass jars; it will keep till summer.

PENNSYLVANIA SISTER.

HELPS.

When doing an ironing, it is a help to the tired mother to select one rod of the clothes-rack upon which to hang articles that need repairing. When a button is missing, a rip or rent in little aprons or a hole in a stocking, hang the garment on the one selected rod; then, when the clothes are folded to be put away, they need no examining, as the pieces requiring a few stitches are all in one place. Make it a golden rule to never put an article away unmended.

Gingham aprons for little girls are pretty trimmed with straight rows of serpentine braid, stitched on by the sewing-machine through the center of the braid; it is easily done up if ironed on the wrong side.

Black ink spots may be taken from white goods by dipping the soiled parts in melted tallow, letting it lie for awhile, and then washing the ordinary way.

An easy way to make a pudding and at the same time save cold rice that may be left from another meal, is to take one cup of the cooked rice, one pint of sweet milk, two eggs, lump of butter as large as a walnut, sugar to taste, a cup of raisins and nutmeg to flavor. Beat the eggs, sugar and butter together, then add the other things, and bake or steam until done.

Whenever eggs are used in baking, it is better to beat them thoroughly before any other ingredients are added. This is especially true when baking-powder is used, as too much beating, after the powder is added, seems to kill its essential qualities.

Sometimes when women have an unusually tiresome day's work to do, they put on light shoes with thin soles, hoping by this means to avoid fatigue. This is a mistake, as heavy shoes, if they fit well, will prevent both corns and aching feet. It is said a teaspoonful each of tar, sugar and saltpetre melted together will cure corns; put a little on thin, kid leather and apply.

In cleansing black stockings, it is not necessary to wash the entire stocking every time they are done up. By a little care the feet only may be washed, and thus the color may be retained much longer. Stockings should never be put into the suds until they are turned wrong side out. COUSIN NABBIE.

EASE YOUR COUGH by using Dr. Jayne's Expectorant, a sure and helpful medicine for all Throat and Lung ailments, and a curative for Asthma.

See our Great Offer on page 235.

A CONVENIENT CLOTHES-LINE.

"A" is a pulley fastened under the porch, "B" is a pulley fastened to a high post or on top of the barn, "C" is a double rope. Commencing at "A" and working the line toward "B," you can hang up that many clothes without going off your porch. A great saving to going through

snow or wet grass. Those using them would not be without. J. A. W.

OATMEAL BREAD, ETC.

OATMEAL BREAD.—Stir the "A" oatmeal into a sauce-pan of boiling water, making a thick dough. Put the hot dough into an agate basin—say two inches in depth—filling it nearly full; if by chance the dough should be too stiff, cover the top with boiling water. Bake or steam an hour or more; it will rise about an inch. Cut in slices and serve with butter or other relishes.

NOTE.—Like all cooked food, the quicker this bread is thoroughly cooled, the longer it will keep. To rewarm, cut in slices and toast, or butter lightly and then brown in a frying-pan. When preferred soft, place the slices a few moments in a small quantity of boiling water. The water thus used affords a nutritious drink.

Send One NEW Subscriber AND Get Your Paper FREE.

We make this liberal offer, as follows:

ANY PERSON can have this paper one year free if they will send us one NEW yearly subscriber at the regular price, 50 cents a year for the paper alone.

Notice the following conditions:

A NEW subscriber must be a person whose name is not now on our list, and must be a person whom you have sought out and solicited to take the paper and who has consented to receive it. A change from one member of a family to another is not securing a NEW subscriber.

Accept this offer at once, as we may withdraw it. The offer is good now.

All subscriptions of present subscribers advanced one year from date on label.

When any one takes advantage of the above offer, the person securing and sending the new subscriber is not entitled to any other premium or reward except one year's subscription to this paper, but the new subscriber can take any premium offered in connection with the paper, by paying the regular price for the paper, including the premium wanted; for example, the regular price of the grand picture, "Christ Before Pilate," and one year's subscription to this paper, is 75 cents. The new subscriber can have the paper and the picture by paying 75 cents, and the person that goes out and hunts up the new subscriber can have this paper one year free as a reward for his trouble, but is not entitled to any other premium or reward.

The above offer applies to this paper only, and all subscriptions must be for this paper.

We have an office at 927 Chestnut Street, Philadelphia, Pa., also at Springfield, Ohio. Send your letters to the office nearest to you and address

FARM AND FIRESIDE, Philadelphia, Pa., or Springfield, Ohio.

Please examine your Address Label, and if

Your Subscription Has Expired,

or is about to expire, please

RENEW AT ONCE.

Our subscribers will oblige us very much, and save us time and trouble in keeping accounts, if they will be so kind and thoughtful as to renew at least two weeks before their time is out, and thus avoid missing a number.

We cannot keep back numbers, because our subscription price is so low that we cannot afford to hunt up back numbers.

The only way to avoid missing a number is to renew two weeks before your subscription expires.

Our Household.

ABOUT THE HOUSE.

PEOPLE who suffer from chapped hands should be careful to dry them thoroughly after they are washed. This prevents chapping. If the hands are already chapped, however, there is nothing better than camphor ice. This preparation contains no glycerine, a component part of many other ointments used for this purpose, and consequently of no use to the large number of persons to whose skin glycerine is irritating. To make camphor ice, take three drachms of camphor gum, the same amount of white beeswax and the same amount of spermaceti; add two ounces of olive oil. Put the ingredients together in a cup on the stove, in a moderately warm place, where they will melt slowly together and form a white ointment in a few minutes. Pour it in an earthen box or cup, and when cool, use. Rub the camphor ice on the hands before going to bed; put on gloves, and after a night or two of such treatment the ordinary cases of chapped hands will succumb.

Lemon juice is much better than oxalic acid for taking out stains on the skin. It softens it and leaves it in better condition. There are a certain number of drugs that every one should have at hand in convenient places, kept in glass bottles with glass stoppers. Among these is ammonia, which is perfect in its cleansing properties; then comes vaseline, glycerine, borax, alum, camphor and alcohol. Every one of these is needed.

Home-made candies are not only superior to the cheap mixtures sold by the grocers, but cheaper as well. Excellent cream taffy can be made as follows: Three cups of granulated sugar, half a cup of vinegar, half a cup of water, butter size of a walnut. Boil without stirring until it will candy when dropped in cold water. Flavor, and pour out on a buttered dish. When cool, pull till white, then cut up in sticks with sharp scissors.

Butter-scotch calls for one cup of sugar, one cup of molasses, half a cup of butter, one tablespoonful of vinegar, pinch of soda. Boil all together till done, pour in a buttered pan and cut in squares when cold, and wrap in paraffine paper.

For a very nice custard pie, beat three eggs, three heaping tablespoonfuls of sugar, one of flour, a pinch of salt and grated nutmeg to taste in a quart bowl, having in the meantime put your milk on to scald. When the milk is scalding, pour it over the beaten eggs, etc., stirring briskly. Have a large, deep pie-plate lined with crust, set in the oven and let stiffen a little, then pour in the custard. Do not have the oven very hot, just hot enough to brown the froth which will rise to the top of the custard a delicate color.

For frozen pudding, take one pint of heavy cream, the yolks of four eggs and beat together; make a sirup of one pound of sugar and one pint of water, put on the fire when very hot, add forty blanched almonds, pounded fine, one ounce of chopped citron, two each of raisins and currants, one ounce of candied orange and lemon peel each, the juice of one lemon; pour in freezer and freeze. Set aside one hour to harden.

To brighten gilt picture frames, take sufficient flowers of sulphur to give a golden tinge to about one and one half pints of water, and in this boil four or five bruised onions, or garlic, which will answer the same purpose. Strain off this liquid, and with it, when cold, wash with a soft brush any gilding which requires renewing, and when dry it will come out bright as new.—*Cricket, in the Waverley Magazine.*

RECIPES FOR MUTTON.

ROAST MUTTON.—Take a leg of mutton, wipe with a damp cloth, rub with salt and pepper. Lay in a baking-pan, with a teacup of boiling water, set in a hot oven and baste frequently. Take up, and season the gravy with minced parsley, stir in grated cracker to thicken.

TO HARICO MUTTON.—Take a choice piece and divide into chops, sprinkle with salt and pepper, and broil over live

Facts are What You Want.

A just judge demands them—the case stands upon them;

And no one thinks, these days, of taking any serious steps without them.

So when you are asked to accept a statement, you are entitled to every assurance that evidence can give.

There is security in this uncompromising attitude: you know exactly what to expect; there is no misunderstanding.

Faith alone can accomplish wonders.

But here is something more; knowledge—experience—proof.

So, when Drs. STARKEY & PALEN say that their Compound Oxygen Treatment is curative and revitalizing, they can prove it.

When they tell you that it not only cures—but cures permanently—the most severe and disheartening diseases, they can prove that, too.

Look at the letters opposite:

There is enough heartiness for any one.

Well, Drs. STARKEY & PALEN have thousands of testimonials equally strong from those who have been restored and revitalized by the use of the Compound Oxygen Treatment.

The question has been asked: "How is it possible to get so many hearty indorsements?"

Ordinarily it is impossible, but here is the secret in this instance:

Drs. STARKEY & PALEN, before undertaking any case, get a full description of it from the patient, personally or by mail.

After that they receive regular reports.

They follow closely every development, and provide for each emergency.

To do this they have a staff of six skillful physicians who make themselves thoroughly familiar with the diseases and surroundings of all patients under their care.

So it is from this personal correspondence that so many testimonials come to Drs. STARKEY & PALEN.

They are published, however, only by specific permission from those who feel grateful for the benefit they have received from the Compound Oxygen Treatment.

There are strong reasons to expect that it will cure.

Here are a few:

Both Drs. STARKEY & PALEN are skilled physicians.

They are thorough chemists.

They have dispensed their Compound Oxygen Treatment for more than 20 years.

It is blood food—nerve nourishment;

It is instantly and easily available;

It cures as nature cures; that is to say: Nature gives one strength with which to combat disease; puts one in a condition to resist maladies.

This is precisely what the Compound Oxygen Treatment has done all these years, and is doing now.

The common sense of this method ought to be its best recommendation.

The stronger you are—the less will you have of disease.

The Compound Oxygen Treatment makes you strong.

Over 55,000 invalids have used this remedy.

More than 1,000 physicians use it in their practice now.

It is a grand specific for Consumption, Asthma, Catarrh, Hay Fever, Headache, Neuralgia, Dyspepsia, Rheumatism, Bronchitis, Nervous Prostration, and all chronic and nervous disorders.

This covers considerable ground, you will say;—but all the better.

It covers each disease in the same way.

Gives you strength—that's the point—strength to resist.

Anything that does that—no matter how general in its character it may be—can become intensely specific.

Send for Drs. STARKEY & PALEN's 200-page book—you will get it by return mail—entirely free of charge.

It will tell you who have been cured—where all these restored and revitalized men and women live—and describe the diseases removed. Address

DRS. STARKEY & PALEN, 1529 ARCH ST., PHILADELPHIA, PA.; 120 SUTTER ST., SAN FRANCISCO, CAL.; 58 CHURCH ST., TORONTO, CANADA

coals; make gravy, season, and add two small carrots, one turnip, one onion, a tablespoonful each of tomato, walnut and mushroom catsup, pour over the meat, and serve with green tomato pickles.

STUFFED LEG OF MUTTON.—Take a leg of mutton, cut down the underside and remove the bone; fill it with a dressing made of four ounces of suet, two of chopped ham, six ounces of stale bread, two eggs, one onion, a little thyme, sweet marjoram, parsley, nutmeg, salt and pepper, sew up, lay in a pan and put in a hot oven, baste with butter, cook three hours. Serve with mint sauce.

RAGOUT.—Brown four tablespoonfuls of flour, add a tablespoonful of butter and a teacup of boiling water, stir over the fire;

From an ex-U. S. Senator.

"In the Spring of 1886 I had a severe attack of inflammatory rheumatism, which in a few days was complicated with dropsy and asthma.

"I had the counsel and assistance of eight different physicians, my son among the number, some of them counted among the best of this State and Wisconsin. But I grew worse daily; I could not lie down in bed. I did not have my clothes off, only to change them, for several weeks; and finally, had not closed my eyes in sleep for over seventy hours.

"I had to be fanned much of the time to get air enough to breathe at all.

"As a last resort—when I was given less than twenty-four hours, by two of my most skillful and noted physicians, to live—my son, Dr. A. W. Powers, telegraphed you for your Compound Oxygen Treatment.

"It came on the 12.20 train, and I took my first dose.

"In fifteen minutes I went to sleep soundly for five minutes.

"At night I took another inhalation of the Compound Oxygen and slept over twenty minutes

"In less than a week I could undress and lie in bed, bolstered up, and sleep soundly and breath with comparative ease.

"From that I grew better.

"My rheumatism has left me entirely; and last fall, at 62 years of age, I passed a good examination for life insurance.

"I think I owe my life to the Compound Oxygen Treatment.

"Ex-SENATOR C. S. POWERS.

"Preston, Fillmore Co., Minn., May 6, 1889." To Drs. STARKEY & PALEN, Philadelphia.

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"DRS. STARKEY & PALEN:

"I ordered your Compound Oxygen Treatment for two of our pupils who were suffering with chronic nasal catarrh.

"One of the girls was in such a condition that her schoolmates avoided her, and indeed the discharges from her nose and throat were so offensive that I could not, myself, have her near me.

"She has been using your Compound Oxygen Treatment for about three months, and she is so relieved that her person is in no degree offensive.

"She is so grateful for her improvement that a few days ago she thanked me beautifully, and said she wished to do something for me.

"The other little girl is entirely relieved.

"I have used it myself to strengthen my voice, successfully, and a sister, also, has been using it for a year with wonderfully good results.

"MRS. MARY DUDLEY,

"Matron of Deaf and Dumb Institute.

"Danville, Ky., May 24, 1889."

cut up two pounds of mutton with one teaspoon of pepper and a little salt, put in a quart of water, let come to a boil, and drop in half a dozen tomatoes, four sliced carrots, eight potatoes and two onions. Simmer all together slowly for three hours.

ELIZA R. PARKER.

TISSUE PAPER ORNAMENTS.

There are many pretty trifles one can easily make from the various colored tissue paper. And the best recommendation for them is that when they get faded or soiled, we can toss them into the fire, without begrudging the time spent in their manufacture. A pretty garniture for a hanging-lamp shade is made of two thicknesses of the white paper, cut into fine fringe and crimped. It must hang

the whole length of the shade, so as to cover it completely; gather slightly at the top. After it is on, twist a wreath of pink moss roses (also made of tissue paper) around the top.

Tissue paper "throws" are made by fringing the ends of a sheet to a depth of three inches. Then fold together the long way, until the folds are only an inch in width. Now cut one side of the fold in even slashes, one fourth of an inch apart, and three fourths of the way across the fold. Then cut the other side in the same way, having the slashes come between the others. Open the work carefully and you will have a very pretty, lace-like scarf to throw over a picture. It is the same kind of drapery that our grandmothers used to ornament their clocks and mirrors with.

FANNY FLETCHER.

Our Sunday Afternoon.

WATCHING FOR THE MORNING.

We are watching for the morning,
We are waiting for the day,
When the rising sun of glory
Bids the darkness flee away;
When its rays shall pierce the caverns
Where the precious jewels sleep,
In the mountains, plains and valleys,
And the ocean's mighty deep.

We are waiting for the morning,
And we almost catch its gleams,
As the eastern sky is brightening
With the sunlight's golden beams;
And we soon may hear the trumpet
That will wake the holy dead
From their long and silent slumber
In their cold, earth-pillowed bed.

Soon the King will in his beauty
From the Father's throne descend,
And the mighty host of angels
Will his majesty attend.
Then they'll gather all his loved ones
Scattered wide o'er all the earth—
All the ransomed of the Savior,
Precious gems of priceless worth.

Oh, the thought of our redemption,
When we know it's drawing nigh,
Lift our heads and hearts rejoicing
Toward his coming in the sky;
When with rapture we behold
The bright glory of our King—
Grand! the symphony of voices
From the ransomed hosts that sing.

—G. L. B., in *Herald of Life*.

BE CONTENT.

BE CONTENT with such things as ye have. Some people have better things; others have worse. You, perhaps, cannot have the better, and you have no desire for the worse; then be content with what you have. You may have had better things in the past, you may have worse things in the future. Be thankful for the present, and be content. If your lot is a hard one, you may improve it, but not by murmuring, fretting, or repining. Just here, to-day, learn the lesson of contentment, and wait on God for brighter days, for richer fruits, for purer joys.

No blessing comes to the murmuring, complaining, discontented heart. When once this evil demon of discontent has entered into the soul, nothing is right. Even the "angel's food" was not good enough for the murmuring Israelites, and "the corn of heaven" could not satisfy those whose souls were filled with the discontent of earth. But when once the heart has found its rest in God, and all its murmurings are hushed in sweet submission to his will, there is peace in believing, and joy in the Holy Ghost, and a hallowed confidence in the kind providence of him who hath done all things well. "Let your conversation be without covetousness; and be content with such things as ye have: for he has said, I will never leave thee, nor forsake thee. So that we may boldly say, the Lord is my helper, and I will not fear what man shall do unto me."

—The Christian.

SUNLIGHT.

"Every tree, plant and flower grows and flourishes by the grace and bounty of the sun. Leaving out of account the eruptions of volcanoes and the ebb and flow of the tides, every mechanical action on the earth's surface, every manifestation of power, organic and inorganic, vital and physical, is produced by the sun. Every fire that burns and every flame that glows dispenses light and heat that originally belonged to the sun." Light is the source of life, of beauty, of manifested reality, of warmth, comfort and joy, of health and power. It destroys all darkness; it unites in itself purity and clearness. Without it the world would be but a mass of coldness and death. Now, what light does for the natural world, Jesus does for the world of man, for mind, soul and spirit.

Public Speakers and Singers

Can use "BROWN'S BRONCHIAL TROCHES" freely, without fear of injury, as they contain nothing injurious. They are invaluable for allaying the hoarseness and irritation incident to vocal exertion, effectually clearing and strengthening the voice. "They greatly relieve any uneasiness in the throat."—S. S. Curry, Teacher of Oratory, Boston. Ask for and obtain only "BROWN'S BRONCHIAL TROCHES." 5 cents a box.

LOVE OF GOD AND MAN.

The love of God and the love of man must go together to make the missionary. Neither can be conceived of as standing alone. Let man's heart be filled simply with the sense of God's love for him and his love for God, and he may rejoice in the delightfulness of this affection, and forget that it is selfish, because it is so rich, and he has lost sight of the multitude to whom he might carry this love. On the other hand, let a man be filled with love only for man, and you have no missionary. Again, you may have the philanthropist, who is ready to help his fellow men, but you have no man who stands distinctly with the mission that God intends, with a great influence coming from God through his manly nature, to reach those for whom it is intended. When these two elements unite in the church, only then you have the prosperity of foreign missions. It is like the meeting of the chemical elements which have in them the power of the fire, neither of them holding it alone, but each requiring from the other its magic touch to give to the fire life, and the fire starts suddenly into its glorious blaze the moment the two come together. This is the simplicity of missions. Whatever may come afterward, in organization or in development, everything comes back at last to this.—*Phillips Brooks*.

LIFE'S MISTAKES.

Somebody has condensed the mistakes of life, and arrived at the conclusion that there are fourteen of them. Most people would say, if they told the truth, that there is no limit to the mistakes of life; that they are like drops in the ocean, or the sands on the shore in number; but it is as well to be accurate.

Here, then, are fourteen great mistakes: It is a great mistake to set up our own standard of right and wrong, and judge people accordingly; to measure the enjoyment of others by our own; to expect uniformity of opinion in this world; to look for judgment and experience in youth; to endeavor to mold all dispositions alike; not to yield to immaterial trifles; to look for perfection in our own actions; to worry ourselves and others with what cannot be remedied; not to alleviate all that needs alleviation, as far as lies in our power; not to make allowances for the infirmities of others; to consider everything impossible that we cannot perform; to believe only what our finite minds can grasp; to expect to be able to understand everything. The greatest of mistakes is to live for time alone, when any moment may launch us into eternity.

SEVEN WAYS OF GIVING.

The careless way.—To give something to every cause without inquiring into its merits.

The impulsive way.—To give from impulse as much and as often as love and pity and sensibility prompt.

The lazy way.—To make a special offer to earn money for benevolent objects by fairs, festivals, etc.

The self-denying way.—To save the cost of luxuries and apply them to purposes of religion and charity. This may lead to asceticism and self-complacency.

The systematic way.—To lay aside as an offering to God a definite portion of our gains—one tenth, one fifth, one third or one half. This is adapted to all, whether poor or rich; and gifts would be largely increased if it were generally practised.

The equal way.—To give to God and the needy just as much as we spend on ourselves, balancing our personal expenditures by our gifts.

The heroic way.—To limit our expenditures to a certain sum, and give away all the rest of our income. This was John Wesley's way.—*A. T. Pierson*.

BIBLE AND CREED.

It is thought by the *Elmira Advertiser* that as the Bible has been revised, it ought not to be dreadful to revise a creed. It would so seem; but the Bible was mere inspiration, while the creed-makers were very large men. Then, too, there is that back-bone which would sacrifice millions of men and women, and especially children, rather than give up a moiety of its marrow. Firmness must not be allowed to deteriorate, and who does not admire back-bone? Then again, all the sufferers are to be anybody but ourselves. What material for a hymn of praise there is in that!—*Judge*.

Bermuda Bottled.

"You must go to Bermuda. If you do not I will not be responsible for the consequences." "But, doctor, I can afford neither the time nor the money." "Well, if that is impossible, try

SCOTT'S EMULSION

OF PURE NORWEGIAN COD LIVER OIL.

I sometimes call it Bermuda Bottled, and many cases of

CONSUMPTION, Brouchitis, Cough or Severe Cold

I have CURED with it; and the advantage is that the most sensitive stomach can take it. Another thing which commends it is the stimulating properties of the Hypophosphites which it contains. You will find it for sale at your Druggist's but see you get the original SCOTT'S EMULSION."

Graceful Form, HEALTH and COMFORT

Testimonials in regard to its merits constantly received; many say they can wear no other.

Perfectly Combined In

MADAME FOY'S Skirt Supporting Corset

It is one of the most popular in the market and for sale by all leading dealers. Price by mail \$1.40.

FOY, HARMON & CHADWICK, New Haven, Conn.

GRATEFUL-COMFORTING.

EPPS'S COCOA

BREAKFAST.

"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected Cocoa, Mr. Epps has provided our breakfast tables with a delicately flavored beverage which may save us many heavy doctors' bills. It is by the judicious use of such articles of diet that a constitution may be gradually built up until strong enough to resist every tendency to disease. Hundreds of subtle maladies are floating around us ready to attack wherever there is a weak point. We may escape many a fatal shaft by keeping ourselves well fortified with pure blood and a properly nourished frame."—*Civil Service Gazette*.

Made simply with boiling water or milk. Sold only in half-pound tins, by grocers, labelled thus: **JAMES EPPS & CO., Homoeopathic Chemists, London, England.**

If afflicted with sore eyes use **Dr. Thompson's Eye-Water**

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Nota Drug, but a New Scientific Method. A Home Treatment. Used in the Consumptive Hospitals of Europe by Dr. Louis Andral, Paris, and Prof. Carl Broca, Milan, and death-rate at once reduced 85 per cent. 4,900 cures in 50 days. Catarh, Bronchitis, Asthma readily cured. See accounts of discovery in *New York Voice, Christian Advocate and Express*, Dec. 8th, 1887. Cures are rapid, certain, permanent. No failures. A Trial costs you nothing. Send name, address, age, full statement of your disease, and receive Ten Days' Trial Treatment FREE, with Free Diagnosis & Large Book. Address **THE NEW MEDICAL ADVANCE 62 E. 4th St. Cincinnati, O.**

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YOU CAN LEARN FROM OUR CIRCULAR HOW TO OBTAIN 1000 YARDS Sewing Silk and enough BRAID to BIND bot- FREE BESIDES WE PAY COST OF DELIVERING THE GOODS.

Mention this paper.

1000 PRESENTS

Gold Watches, Diamond Rings, Silk Dresses

GIVEN AWAY

We have just given away 402 elegant presents to successful competitors in last Bible-knot contest (names given in our February issue). We want more subscribers, and propose as follows: send us 25c. (stamps or silver), and receive our paper, *Ladies' Home Visitor*, regularly for 4 months. To first person who answers the advertisement, and tells us correctly where the word RIVER first appears in the Holy Bible, we will give a handsome Gold Watch (see cut), ladies' or gentlemen's size. To next one giving correct answer, we will give an expensive Silk Dress, warranted to fit if correct measurements are given. To third person answering correctly, we will give a magnificent Solitaire Diamond Ring. To fourth person, Silver Chatelaine Watch; to next ten, Beautiful Gold Pen and Pencil; next 50, a Pair of Corsets; next 100, Handsome Foulard Tea-Gown; next 200, a reversible Fountain Pen (retail price \$1); next six, a fine Toilet Set; next 30, Ladies' Complete Work-Box. This makes 400 presents. But if we receive 500 more replies to this advertisement, containing 25c. for subscription, and a correct answer to Bible question, we will give each one, absolutely free, a beautiful Gold Ring, Pearl Shell Necklaces, Bracelets, or some other article, either jewelry or wearing apparel. This is the grandest offer we ever made. We do as we agree. Ladies' Home Visitor has been published seven years, and we defy any one to prove we ever made a promise we did not keep. This offer is good till July 29 only, as list of successful contestants will appear in August issue of paper. Write now. Send 25c., and tell where RIVER first appears in Holy Bible. Address **Avon Publishing Company, Boston, Mass.**

SAFE INVESTMENT FARRAND & VOTEY

*** ORGANS ***

DETROIT, MICH. U.S.A.

Our Farm.

HOW TO PLANT CUCUMBERS IN THE HOME GARDEN.

Make shallow trenches as for celery, five feet apart, and drill the seeds three or four inches apart. Between the rows plant three rows of radish seeds. The radishes will come before the cucumbers will need the ground. Protect against bugs by taking two pieces of siding twelve or sixteen feet long. Place the pieces on edge eight or ten inches apart, with thick edges up, and to these nail a strip of mosquito netting. Then place one of these boards on each side of the row and close up at the ends with brick or pieces of boards. These protectors may be preserved from year to year more conveniently than boxes. At a proper time, the plants are to be thinned down to ten or twelve inches apart, and in hoeing, the ground may be drawn up to the plants. The objection to the hill plan is that the four or five plants in a hill, each with its several branches, make a huddle of fifteen or more branches in a small compass. With the plants ten or twelve inches apart there is no such crowding, and each plant has a broader field for obtaining its nourishment.

S. D. NEWBRO.

WHEY AND SKIMMED MILK.

Mr. A. Wahlm has on exhibition in this city a dairy product which merits attention from scientific men. It is the invention of Prof. W. Rehnstrom, dairy instructor and agricultural engineer of Sweden. With his knowledge of milk, he was well aware of the many valuable elements running to waste, being considered worthless by butter makers as well as cheese manufacturers. In hunting for means of utilizing these, he made one practical discovery which has apparently opened up new sources of profit for dairymen.

The product is named lactoserin, which is derived from the Latin word *lac*, milk, and *serum*, whey. Skimmed-milk is curdled in the same way as commonly used in cheese making, only that a larger quantity of rennet is used, and at a higher temperature, so as to make the precipitation complete. To the whey thus obtained is added an equal quantity of skimmed milk, and the bulk, through a simple process of evaporation, is transformed into solid, nearly water-free cakes, which are afterward cut or ground, and more or less roasted, to suit whatever purpose intended. These solids contain azotic or organic nutritious substances and carbo-hydrates.

Mr. Wahlm says that lactoserin, mixed with coffee, produces a beverage which in taste approaches and sometimes even surpasses that of the best unmixed coffee, and in nutritious value far surpasses the same. In salutary respects it produces for invalids or the physically weak a beverage where the enervating properties of coffee are reduced to a minimum. Mixed with cocoa, a chocolate is produced which in nutritious qualities stands quite equal to the best known and most valued cocoa preparations. For household purposes, such as for thickening and flavoring soups and sauces, in preparing desserts and ices, it has been found to be of great value. Confectioners and bakers in the old country have found the preparations of great benefit in their business. As a food for infants and invalids, lactoserin, many physicians attest, is superior to similar preparations of world-wide fame.

In Germany and the northern or principal dairy countries of Europe, the only use found for skimmed milk during certain seasons of the year, prior to the invention of Rehnstrom, was to give it back to the cow or to pigs. It is the same in America now, and the method of utilization is not profitable. Rehnstrom found by experiment that the cheesy matters in milk proved a very effective milk producing, muscle-forming and salutary factor in developing the physical character of the cow's body. As a consequence, he invented dry curds, thus demonstrating that by his system, all wastes appertaining to the dairy industry could be utilized in various practical ways.

Dry curds are produced by pressing the curds remaining from the manufacture of the lactoserin, and putting them through a simple process of drying and grinding. They are called caseine, and containing, as they do, a very high percentage of proteine, or that which constitutes the basis of all animal tissue, they are valuable as an ingredient in feeding-cakes for cattle, horses, dogs, poultry, and also in bread, biscuit and other kinds of human food. This product, it is claimed, is richer in proteine and of greater nourishment than meat, even.

The crude material represented by the American representative had the appearance of slabs of white marble. Pieces had been sawed into cubes the size of dice. A lot of these had been roasted a rich brown. Specimens had in turn been ground coarse and fine. Mr. Wahlm is now engaged in interesting dairymen and scientists, and in forming a company to develop the business in this country as it has been done in Europe.—*New York Times*.



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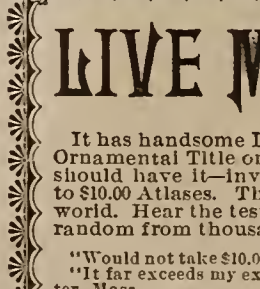
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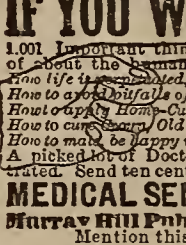
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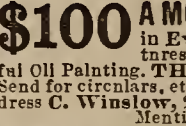
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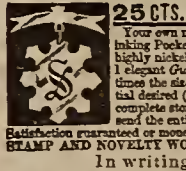
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Let us, then, be what we are, and speak what we think, and in all things keep ourselves loyal to truth, and the sacred profession of friendship.

—Longfellow.

A LIFE that will bear the inspection of God and of men is the only certificate of true religion.—Johnson.

TO FILL your life with the spirit of heaven here is the way to make sure of going to heaven hereafter.—Thomas.

CHOOSE always the way that is best, however rough it may be. Custom will soon render it easy and agreeable.—Pythagoras.

THE hospitalities of the Lord's house reach a good deal deeper than a mere matter of buildings and pew sittings.—Bishop Huntington.

THERE is no talent so useful toward rising in the world, or which puts men more out of the reach of fortune, than discretion, a species of lower prudence.—Swift.

BOOKS are the true levelers. They give to all who faithfully use them the society, the spiritual presence of the best and greatest of our race.—Channing.

THREE days of uninterrupted company in a vehicle will make you better acquainted with another than one hour's conversation with him every day for three years.—Lavalier.

HE—"Why do you break the engagement?" She—"Because pa's dog bit you last night, and I would not run the risk of bringing hydrophobia into the family for the whole world."

PIETY and true morality are but the same spirit differently manifested. Piety is religion with its face toward God; morality is religion with its face toward the world.—Tryon Edwards.

GABBY—"How did you get that dreadful cold?" Snuffleton—"Id the datural way, swoopld! S'pose I advertized for plads ad specifigations?"—Texas Siftings.

No man can lay himself under obligation to do wrong, even for his best friend. Pericles, being once desired by his friend to do so, excused himself, saying, "I am a friend only as far as the altar."

THAT peace is an evil peace that doth shut truth out of doors. If peace and truth cannot go together, truth is to be preferred, and rather to be chosen for a companion than peace.—J. Tillinghast.

To let politics become a cesspool, and then avoid it because it is a cesspool, is a double crime. No Christian citizen should be a partisan in the sense of one who votes for his party, right or wrong.—Howard Crosby.

NEVER did any soul do good but it came reader to do the same again with more enjoyment. Never was love or gratitude or bounty practiced but with increasing joy, which made the practitioner still more in love with the fair act.—Shaftesbury.

ABBY SAGE RICHARDSON, in her dramatization of Mark Twain's charming book, "The Prince and the Pauper," has adapted the title roles expressly for Elsie Leslie. In this new version of the work both parts are to be taken by the same actor, instead of requiring two persons to fill them, as heretofore.

MRS. TODD, the wife of the Amherst astronomer who has gone to Africa to observe the eclipse, helped her husband greatly in his preparations. She read every book concerning the coast to which the expedition was going, and read him selected passages daily. She also worked up formulas and details of geography for him.

BEECHAM'S PILLS act like magic on a weak stomach.

THEY had chicken for dinner, and the host said to the guest:

"Didn't I hear you say that you liked the neck of the chicken best?"

The visitor, who liked the neck with some of the rest, said:

"Yes."

"Well, you shall have both of these necks," and that was all he got.—Christian Advocate.

CONSUMPTION CURED.

An old physician, retired from practice, had placed in his hands by an East India missionary the formula of a simple vegetable remedy for the speedy and permanent cure of Consumption, Bronchitis, Catarrh, Asthma and all Throat and Lung Affections, also a positive and radical cure for Nervous Debility and all Nervous Complaints. Having tested its wonderful curative powers in thousands of cases, and desiring to relieve human suffering, I will send free of charge to all who wish it, this recipe in German, French or English, with full directions for preparing and using. Sent by mail, by addressing, with stamp, naming this paper, W. A. NOYES, 820 Powers' Block, Rochester, N. Y.

It is not known to the general public, though well known to her friends, that Mrs. Ward McAllister devotes the greater part of her time to literature. She is a remarkably well-read woman. She is a subscriber to hosts of magazines and periodicals of all descriptions, and is an encyclopedia on a great many subjects. She has a large and well-chosen library, to which she is constantly adding. She is regarded as an authority on American genealogy.

Noxious insects are far more numerous and destructive now than they were fifty years ago. When nature has a chance to work out her laws, all animals, from the highest to the lowest, do not increase beyond proper limits. Even man himself is no exception to the law; but once let a break occur in this great natural chain, and it is felt all along the line. Some species will increase enormously, while others almost entirely disappear. Now, as insects are more numerous than all the higher animals, it follows that if some unforeseen event takes place that favors a great increase of some noxious species, man is sure to be a heavy sufferer. And this state of things is exactly what is taking place to-day. The reader will naturally inquire why the beneficial ones do not increase as fast as the destructive ones. The answer is, the food plant of the latter has increased enormously, and all the surroundings have favored its rapid increase, while the other, living upon animal (imago) food, is entirely outstripped by the vegetable-eating species.—Vick's Magazine.

HEREDITARY RELIGION.

A little Brooklyn girl returned from Sunday-school in a state of mind because she had heard that Jesus was a Jew, and appealed to her mother.

"Yes, my dear, Jesus was a Jew," said her mother.

"Well, mamma, he was the son of God, wasn't he?"

"Yes, dear."

"Well," said the little one, "I don't see how Jesus came to be a Jew when God himself is a Presbyterian."—Boston Advertiser.

SHE KNEW HIM BETTER.

Among the converts at the present revival in Richmond is a man whose wife left him recently on account of alleged cruel treatment. Sorrowful and repentant, as the story goes, he called on the partner of his bosom, not long since, to promise better fashions and ask her forgiveness. The aggrieved wife listened to his story, but concluded that she could not overlook his past offenses.

"But the Lord has forgiven me," urged the saved sinner, "and why can't you?"

The woman shook her head emphatically as she replied:

"If the Lord knew one sixteenth part of your devilry he'd never forgive you in this world or the next."

EXCELLENCE OF SALT.

If the feet are tired or painful after long standing, great relief can be had by bathing them in salt water. A handful of salt to a gallon of water is the right proportion. Have the water as hot as can be comfortably borne. Immerse the feet and throw the water over the legs as far as the knees with the hands. When the water becomes too cool, rub briskly with a flesh-towel. This method, if used night and morning, will cure neuralgia of the feet.

Carpets may be greatly brightened by first sweeping thoroughly and then going over them with a clean cloth and clear salt and water. Use a cupful of coarse salt to a large basin of water.

Salt as a tooth powder is better than almost anything that can be bought. It keeps the teeth brilliantly white and the gums hard and rosy.

If, after having a tooth pulled, the mouth is filled with salt and water, it will allay the danger of having a hemorrhage.

To clean willow furniture, use salt and water. Apply with a nail-brush, scrub well and dry thoroughly.

When broiling steak, throw a little salt on the coals and the blaze from the dripping fat will not annoy.

Damp salt will remove the discoloration of cups and saucers caused by tea and careless washing.

Brass work can be kept beautifully bright by occasionally rubbing with salt and vinegar.

Wash the mica of the stove doors with salt and vinegar.

Salt in whitewash will make it stick better.

PORT CLINTON, OHIO, Jan. 15, 1890.

I received the Peerless Atlas in good shape, and can only say it is one of the grandest works of its kind I ever saw. I would not take \$10.00 for it if I was not to have another. I can cheerfully say it ought to be in every household in the land, and no person can make a better investment for ten times the money.

JAMES INEICHEN.

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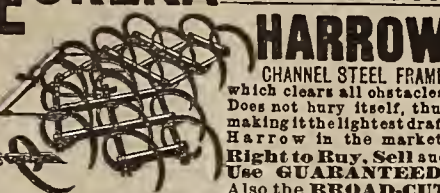
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Was a sweet Chinese,
And she lived in the town of Tac,
And her eyes were blue,
And her curling cue
Hung dangling down her back;
And she fell in love with gay Wlu Sil,
When he wrote his love on a laundry bill.
And O Tin Told
Was a pirate bold,
And he sailed in a Chinese junk;
And he loved, ah, me!
Sweet Wing Tee Wee,
But his valiant heart had sunk;
So he drowned his blues in fickle fizz,
And vowed the maid would yet be his.
So bold Tin Told
Showed all his gold
To the maid in the town of Tac,
And sweet Wing Tee Wee
Eloped to sea
And never more come back,
For in far Chinese the maids are fair,
And the maids are false as everywhere.

—Harvard Lampoon.

A PERSISTENT PEDDLER.

SHOULD like to sell you a gimlet," said a careworn-looking man, as he walked into an office the other day.

"We have no use for one," replied the cashier.

"But you should always look into the misty future," went on the fiend demurely. "Next winter you will want to make holes in your boot-heels so you can get your skates on."

"I use club skates—no straps required."

"You may want to screw some boards together some time. The old-fashioned method of driving screws in with a hammer is pernicious, as it deteriorates the tenacity of the fangs of the screws, as it were."

"Nothing to-day, sir."

"The gimlet also acts as a corkscrew—"

"I don't want it."

"It may be used as a tack-hammer, a cigar-holder and also as a tooth-brush."

"I don't want it."

"It has an eraser, a pen, an inkstand, a table for computing compound interest, and a lunch-box attachment."

"I can't help it; I don't want it."

"I know you don't. You're one of those mean men that won't buy a gimlet unless it has a restaurant, a trip to Europe, and an Italian opera company attached. You're the kind of a man who would live near an electric light to save a gas bill."

And the peddler walked out with his mental plunge on the perpendicular.—*Texas Siftings*.

A FINANCIAL DISCUSSION.

Chronic borrower—"Can you lend me \$20 for a few days?"

Weary friend—"Why don't you paw your watch?"

"Because it is a keepsake from my dear mother and I don't want to part with it."

"My money is a keepsake from my dear father, and I don't like to part with it, either."

—*Texas Siftings*.

ASHAMED OF HIS IGNORANCE.

"I never was so ashamed of my ignorance in my life as I was to-day," said Bass. "I went into a store and there was a lady in there with a dog. The woman spoke French, and if you will believe it, that dog understood every word she said, and I couldn't understand a syllable of it! After that I shall never be able to look that dog in the face."

IN A QUANDARY.

"And now, my good man, what are you going to do with it?" asked the stingy rich man of a beggar to whom he had given a two-cent piece.

"That's just what troubles me, sir. It is so hard to make a wise decision; and I have always been unaccustomed to wealth."—*Somerville Journal*.

SHE WAS RIGHT.

Mabel—"Did you hear that Bessie Willis was married yesterday to Tom Guzzler?"

Maud—"Really? I thought she would be the last person to marry him."

Mabel—"Well, she was, wasn't she?"

CATARRH CURED.

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CATERPILLARS.

The caterpillar is a crawling thing and hears all over his back and fannie found one down her back and it made me crawl like everything. birds eat caterpillars and give them to their children to eat. I don't see how they can eat them, I know I could not, they are such horrid things, they look so offily and feel i don't know how. Caterpillars climb trees. the other day I saw a big, big caterpillar and he was so horrid that I took a stick and kild him with it and threw it away to let the swill man pick it up and take it home period caterpillars have 1000 or more legs, he may not have so many, and he may have more the big ones have more than the little ones i guess but i don't know. Caterpillars eat flies and other insects such as ants, miscatos and others like that. Also they eat leaves, plum leaves and in short all kinds and some flowers to. some have baby caterpillars, in short all of them. Caterpillars drink water, in short everything they can get. Caterpillars, I cannot say much more about caterpillars, but one good rool is never to throw a caterpillar at a man or anybody for it gives them such a fright. i have told you all they eat, drink, how many legs it has and the rool. A caterpillar cau climb, you cannot. Ma be some of you can, i cant, but most of the things that a caterpillar can do we cannot, and most of the things that we can do they cannot.—*Seven-year-old girl in Buffalo Express*.

HE WAS A BANKER.

A very busy Chicago banker was to be married to an Omaha girl, and the day fixed was June 4, at high noon. The day came, but the groom did not materialize, and at 9 A. M. this telegram was received:

"For heaven's sake tell us what is the matter, this is your wedding day; the hour approaches."

He was scared half out of his wits, and rushing to the telegraph office sent this answer:

"Thought I had three days of grace. Don't let it go to protest. Coming on the next train."

The wedding was late, but it was a merry one, and all was forgiven.

A NICE BLUFF.

Life insurance agent—"Come, can't I place some insurance on your life? We're all liable to die at any moment, you know."

Citizen (who has had three other agents in to see him since reaching his office)—"That's so. Life is uncertain, and it is especially so with me. My physician says I am liable to drop off at any moment with heart disease. He gives me only a couple of months to live."

Life insurance agent—"Oh! Excuse me. There is no need of pursuing the subject further. Sorry to have troubled you. Good morning."

Citizen—"By Jove! That idea of mine works like a charm."—*Boston Courier*.

HER HANDS FULL.

Excited boy—"Come on, quick! The ould man is batin' the ould woman again."

Police justice—"Why don't she come herself, if she wants to make a complaint or have him arrested?"

Excited boy—"She's too busy. She's got him down, and is bumpin' his head on the flure."—*Texas Siftings*.

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 Catalogue of the Prun potato digger. Henry S. Prun, Hoosick Falls, N. Y.
 Illustrated descriptive catalogue and price list of seeds. Frank Finch, Clyde, N. Y.
 Spring catalogue of strawberry plants grown and for sale by M. Crawford, Cuyahoga Falls, Ohio.
 Catalogue of Pleasant Valley Nurseries. John S. Collins, Moorestown, Burlington county, N. J.
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ALABAMA.—(Anburn) Bulletin No. 9. Nematoe root-gall. A preliminary report on the life history and metamorphosis of a root-gall nematode, *Heterodera radiclecola* (Græf) Mull., and the injuries produced by it on the roots of various plants. [Intended for professional entomologists.] Bulletin No. 10, January, 1890. Grape culture. Experiments showing that grapes may be successfully cultivated on the worn out and gullied hillsides of Alabama.

CALIFORNIA.—(Berkeley) Bulletin No. 85, February, 1890. Observations on olive varieties.

CANADA.—(Bureau of Industries, Toronto) The swine industry in Ontario.

CONNECTICUT.—(State Station, New Haven) Bulletin No. 101. Fertilizer analyses.

FLORIDA.—(Lake City) Bulletin No. 8, January, 1890. Annual report.

GEORGIA.—(Griffin) Bulletin No. 6, January, 1890. The cotton caterpillar; the potato sphinx; the twig girdler. "Southern drift" and its agricultural relations.

MASSACHUSETTS.—(Hatch Station, Amherst) January, 1890. Second annual report.

MICHIGAN.—(Agricultural College P. O.) Bulletin No. 56, February, 1890. Rib-grass, or narrow-leaved plantain, in fields of clover.

MINNESOTA.—(St. Anthony Park) Bulletin No. 9, November, 1889. Russian willows and poplars—descriptions and value for Minnesota; insects affecting willows and poplars.

NEW JERSEY.—(New Brunswick) Bulletin No. 63, December 30, 1889. Experiments on tomatoes. [Effect of commercial fertilizers and barn-yard manure on quantity and quality of the crop.] Bulletin No. 64, December 31, 1889. Some fungus diseases of the cranberry.

NEW YORK.—(Cornell Station, Ithaca) Bulletin No. 14, December, 1889. 1. On the strawberry leaf blight. 2. On another disease of the strawberry. Bulletin No. 15, December, 1889. Sundry investigations made during the year.

NORTH CAROLINA.—(Raleigh) Bulletin No. 67, October 15, 1889. Seed tests. Bulletin No. 68, November 1, 1889. Farm and dairy buildings.

OHIO.—(Columbus) Bulletin No. 14, November, 1889. Cabbage and cauliflower—comparison of varieties; Puget sound cabbage and cauliflower seed. Experiments with remedies for certain plant diseases.

RHODE ISLAND.—(Kingston) Bulletin No. 2, June, 1889. Historical, physical and geological description of the station farm. Bulletin No. 3, September, 1889. Sock feeding, including: composition of animals and animal products; constituents of plants, their digestibility and function in the animal economy; feeding standards and tables; general discussion of the feeding question, etc. Bulletin No. 4, December, 1889. Bee keeping, its importance, possibilities under modern management, etc. Bulletin No. 5, December 31, 1889. Potatoes, methods of planting and test of varieties. Meteorological summary.

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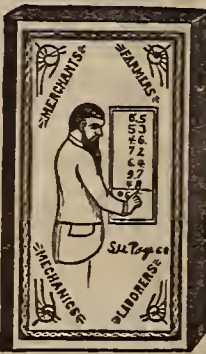
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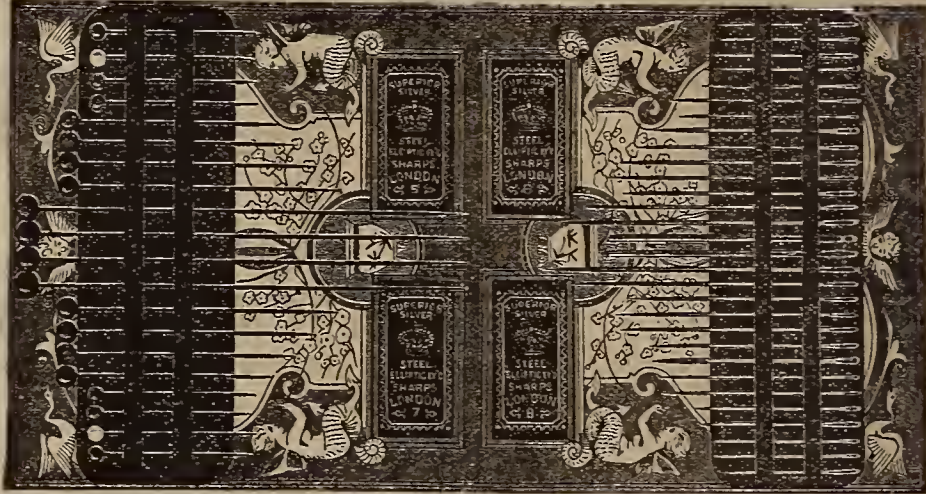
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2 Carpet Needles.....	2 "	2 Long, Coarse, Wool Darners.....	2 "
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2 Sack or Bagging Needles.....	2 "	2 Long Cotton Darners.....	2 "
3 Coarse Button Needles.....	3 "	2 Fine Cotton Darners.....	2 "
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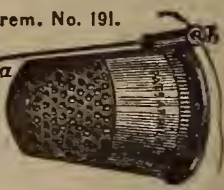
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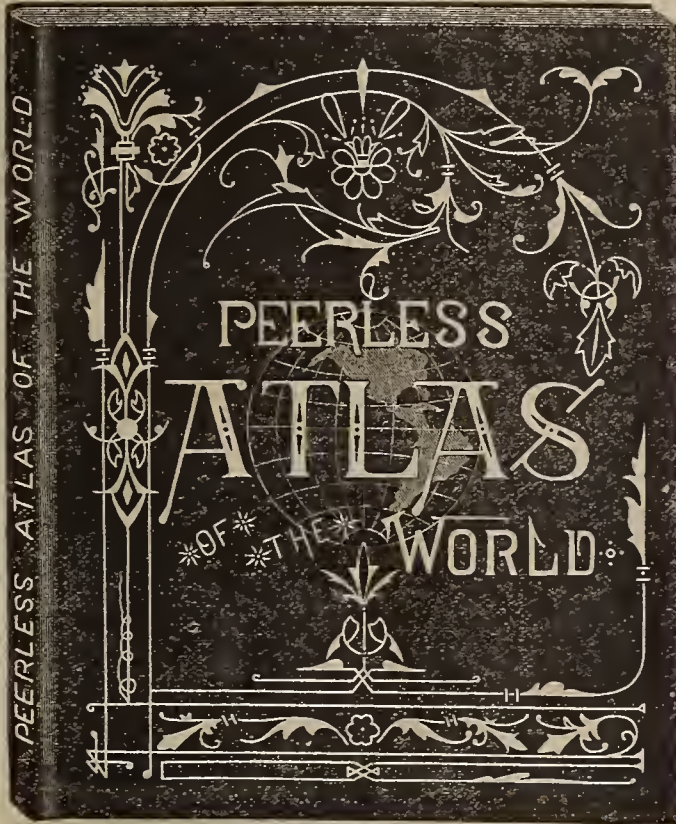
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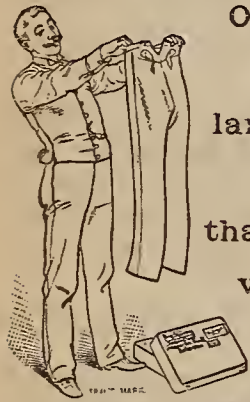
[Premium No. 100.]

SIZE, 21 by 28 INCHES.

DESCRIPTION OF THE PAINTING The scene chosen for the painting is the "Judgment Hall" in the palace of Pilate, and the hour "early in the morning." Around the Governor the priests are gathered, and the high-priest, Caiaphas, is accusing Christ and demanding his death. The central figure, and the most impressive of all, is Christ himself, clad in white, with flowing hair and bound wrists. He stands alone in the simple majesty of his own personality, without sign or symbol, save his individual greatness. A heavenly submission is on his face.

The Markets.

BUTTER.—			
Fancy Creamery...	24 @ 23	26 @ 27 1/2	27 @ 28
" Dairy.....	20 @ 24	22 @ 24	18
Common.....	5 @ 8		10 @ 12
GRAIN.—			
Wheat No. 2 spr'g	75 1/2		
" No. 2 w't'r	78 1/2		
Corn, ".....	25 1/4 @ 25 1/2	37	38 @ 40
Oats, ".....	21 1/4 @ 23 1/4	28 @ 30	30 @ 35
LIVE STOCK.—			
Cattle, Extra.....	5 00 @ 5 15		
" Shippers.....	4 30 @ 4 40	3 40 @ 4 50	3 00 @ 3 50
" Stockers.....	2 40 @ 3 60		2 00 @ 2 50
Hogs, Heavy.....	3 95 @ 4 00	4 40 @ 4 70	3 25 @ 4 00
" Light.....	3 95 @ 4 10		
Sheep, com. to good	4 00 @ 5 95	5 25 @ 6 30	2 00 @ 3 00
" Lambs.....	5 95 @ 6 25	4 00 @ 7 00	
PROVISIONS.—			
Lard.....	6 10	6 40	5 12 @ 5 25
Mess Pork.....	10 30	10 15	11 00
SEEDS.—			
Flax, No. 1.....	1 48		
Timothy.....	1 24		
Clover.....	2 75 @ 3 20		
WOOL.—			
Fine, Ohio & Pa.		31 @ 34	
" Western.....		29 @ 30	
" Unwashed.....	16 @ 21		
Medium, Ohio & Pa.			
" Western.....			
" Unwashed.....	23 @ 26		
Combing & Delaine		35 @ 41	
Coarse & Black.....	19 @ 21		



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larger increase
in 1889,
than for 18 pre-
vious years.

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- (3) 52 patterns, cut from cloth itself, to select from.
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- (5) Entire outfit as shown above, sent FREE upon application, post-paid.
- (6) Increase of our branch stores as far South as New Orleans, and West to Chicago, successfully competing for fine city trade.
- (7) Thousands of people telling each other of our honorable treatment of customers, and excellent wear and fit of our clothing.

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18 Pages, with Supplement.

EASTERN EDITION.

VOL. XIII. NO. 14.

PHILADELPHIA, PA., and SPRINGFIELD, OHIO, APRIL 15, 1890.

TERMS (50 CENTS A YEAR.
24 NUMBERS.)

The Circulation of FARM AND FIRESIDE
this issue is

250,500 COPIES.

The Average Circulation for the 24 issues of
the year 1889, was

240,650 COPIES EACH ISSUE.

To accommodate advertisers, two editions
are printed. The Eastern edition being
100,200 copies, the Western edition
being 150,300 copies this issue.

Farm and Fireside has the Largest Circulation
of any Agricultural Journal in the World.

Current Comment.

GET ready for the census enumerator. The eleventh census will be by far the most comprehensive ever taken. Superintendent Porter has planned for investigations in many special industries. Especially in agriculture has the scope of the census been enlarged. The aggregate of capital invested in special industries heretofore omitted from the census is immense. The dairy interests, live-stock in villages and cities, vineyards, tropical and semi-tropical fruits, market gardens and small fruits, irrigation, etc., will receive special attention. The agricultural returns will be of special value in the study of the causes and remedies for the prevailing agricultural depression. It is desirable that the returns be as accurate as is possible to obtain them. Do not wait until the last minute, but take a little time and prepare your statements carefully and have them ready for the enumerator.

ONE of the measures of special importance to farmers now before the Ohio legislature is the bill to provide for the organization and support of farmers' institute societies.

The first and second sections of the act provide that farmers' institutes, not to exceed three in number, may be organized in each county of the state, with a constitution and by-laws in accordance with rules and regulations furnished by the state board of agriculture, and that said board shall have the power to determine the number and name the time and place for holding each institute.

Sections three and four provide for meeting the expenses of the institutes. The expenses are to be paid from the county treasury, but in no county shall the total annual sum exceed two hundred dollars. A sum equal to two mills for each inhabitant of the county shall stand in favor of the president of the state board of agriculture, and a sum equal to three mills for each inhabitant in favor of the president of the farmers' institute society. This fund is to provide for the actual running expenses of the institute, and no part of it is to be used for salaries of officers.

The fifth section provides that the state board of agriculture shall furnish, at each annual institute meeting, at least two lecturers, or speakers, whose compensation and expense shall be paid by said board.

Section six provides for the annual publication and distribution, in pamphlet or book form, of such lectures and papers

delivered at the several institutes, as may seem of general interest and importance to the farmers, stock breeders and horticulturists of the state.

If this bill becomes a law, and we hope it will, all the farmers' institute societies of the state will be organized into one system, under the guidance of the state board of agriculture. This arrangement will be a great improvement over the present method. It will simplify the management of institutes and greatly increase their efficiency. Much more can be accomplished in institute work, and far easier. We suggest to all our Ohio readers who are interested in farmers' institutes to give this measure their careful consideration, and if it meets with their approval, to urge their representatives in the legislature to vote for the bill.

THE March report of the statistician of the Department of Agriculture contains an article on agricultural depression and its causes that is attracting much attention. Mr. Dodge first calls attention to the fact that agricultural depression prevails in all nations. It is much worse in some than others. In Great Britain it has been more severe than in any other nation. Our own country feels the effect of agricultural depression less than almost any other in the world, but here "the times" are regarded as very "hard" in comparison with more prosperous eras of the past. Mr. Dodge names as the prime cause of low prices the inexorable law of supply and demand. Abundance leads to low prices, scarcity to high prices.

The increase of agricultural production in this country has been much more rapid than the increase in population. Although the people here consume more than those of any other nation, they have a larger surplus for foreign needs. As one of the causes of overproduction and consequent low prices, he gives the opening up and settlement of an empire of new and productive lands by the extension of our railroads. Tables are given showing the wonderful increase of all our staple agricultural products. It is difficult to force a market abroad for a surplus of any product. Every nation is seeking to produce its own food, and, as far as possible, its raw materials for extension in all forms of industrial production. This country supplies to the cotton factories of the world more than half their material. It cannot increase the supply without reducing the price. The sale does not depend on our purchases abroad. Its aggregate would not be reduced a pound if we should refuse to spend a single dollar for foreign products. The law of supply and demand limits the extension of cotton fields.

"In wheat, overproduction has destroyed the grower's profit. Wheat growing has become a philanthropic mission for supplying cheap bread to Great Britain and encouraging her manufacturers to keep wages on a low plane. The north-western missionaries are still diligently sowing their seed and floating their bread across the waters, and mourning that the profits do not return to them after many days of weary transportation. The area of the crop of 1889 included about ten million acres more than the home consumption of the

year will require; and the price in Liverpool has of late been the lowest for a century.

"We cannot force foreigners to buy our bread. There has been a mass of irreparable nonsense regarding "the markets of the world" for wheat. Less than a fourth of the people of the world eat wheat. Half of the people of Europe scarcely know its taste, while few of the nations of Asia and Africa have any knowledge of it.

"Of the average four bushels consumed by each inhabitant of Europe, only half a bushel comes from other continents, and this is practically the measure of the market for the wheat surplus of the world, a market which neither reciprocity nor the persuasion of any international comity can enlarge—nothing but war, famine or pestilence, nothing but an act of God or a change of crop distribution utterly at variance with long settled policy and practical sense, can swell to sudden importance the demand for wheat and flour that will relieve prevailing stagnation and advance prices.

"Thus the staple products of agriculture, by increase of farms, by railroad building and land settlement, and the increase of agricultural implements, are grown to excess, while other products with which our farmers are not familiar are neglected, and left to foreign labor to produce, while our own rural labor is only partially employed, or else is crowding production of these old staples, and still further lowering prices and intensifying dissatisfaction with the results of agricultural effort.

"It is futile to attempt to defy the law of supply and demand. So long as farmers insist on growing only the bread grains, cotton, tobacco and cattle, and to neglect other products which are needed, which we import at a cost of more than \$200,000,000 annually, just so long will the lamentation over low prices continue. Diversification is essential to agricultural salvation. There are writers and speakers who are doing incalculable injury by their influence in repression of any tendency to a wider range of rural production, encouraging indolence and idleness, paralyzing enterprise, intensifying rural inertia, and encouraging dependence on foreign production, and the draining of the resources of the country to foreign lands. They appear to deprecate any effort towards independence or the cultivation of self-reliance, the stimulation of invention, the acquisition of manual skill, or the development of rural taste. Their advice points in the direction of aimless poverty and practical serfdom.

"The agricultural exports of the United States during the past year amounted to about \$530,000,000 at the seaports, or about \$400,000,000 on the farms. The agricultural imports amounted to over \$348,000,000 at ports of shipment, and fully \$400,000,000 with freights and commissions added, without further allowance for undervaluation. Thus it takes most of our agricultural exports to pay for agricultural imports. These imports are largely food and fibres. The heavier items for 1888-89 were:

Sugar and molasses.....	\$ 93,297,868
Animal and their products, except wool.....	40,419,502
Fibres, animal and vegetable.....	59,453,936
Fruits and nuts.....	18,746,417
Barley and other cereals.....	8,971,722
Tobacco, leaf.....	10,868,226
Wines.....	7,706,772

Total.....\$239,464,443

"Most of this importation should be produced here, and many minor products not named; in fact, there is little on the list, except tea and coffee, that should be imported.

"The main cause of depression is, there is overproduction of a few staples and quite too limited a list of rural products. There is too much hog and hominy, and a narrow range of delicacies that are so eagerly sought by the buyer and so profitable to the producer. There is too much rural labor unemployed, and too much mechanical and manufacturing labor idle, in both cases for lack of sufficient variety,

and because \$500,000,000 or \$600,000,000 are spent in foreign countries for products that could better be made here. It is useless, it is foolish to say that we cannot sell our surplus unless we buy our food and clothing abroad. We did sell last year to a single country to the amount of \$201,000,000 more than we bought of that country, and a similar disproportion exists every year.

"Cotton, by the invention of the gin and the existence of a suitable soil in the South, became the salvation of its agriculture, and then threatened its existence by its refusal to tolerate other raw materials for other arts. The cotton crop is valuable, and will represent a large value, yet it would not suffice to board the people of the South at first-class hotels for a week. A score of other products should further enrich her agriculture to relieve existing depression. All the worsted wools and all the carpet wools that can be woven in the country can readily be produced in the South. Only the invention of an effective decorticator is required to make ramie a great industry, supplementing rather than rivaling cotton; and jute and many native and foreign fibres should swell the list of raw materials.

"And there should be no more need of going to Italy or Japan for raw silk than there is to India for raw cotton. Further, there should be just as little need of going to Cuba for sugar. Nine tenths of all the raw materials required for textile, metallic, mechanical, chemical, oleaginous or other manufacture can be produced, primarily by our farmers, diverting their labor to profitable channels, and swelling the value of their products, steadying the prices of the food staples, and insuring prosperity and comfort to all. No other panacea will cure hard times; a profitable outlet by diversification and extension, for constantly augmenting rural labor, can alone make rural industry profitable. If the policy of going abroad for all fibres except cotton shall be put into permanent practice, and for all sugar and fruits, barley and oil seeds, to be paid for in corn and wheat and cotton, which are already crowded into foreign markets to the last pound and bushel, there will be no necessity for a "single tax" to make the farmer's land valueless, and no need of account-books or pocket-books, and little demand for books of any kind.

"And yet there is gross ignorance abroad of the extent of these limitations of our agriculture, and of the means of recuperation. Many of our farmers are delaying the emancipation of rural industry, and seeking to import cordage to bind upon their backs still closer their present burdens. Instead of enlarging the range of profitable production, they are seeking to restrict it. The wheat growers insist upon going to the antipodes for binder-twine, while a million acres of flax fibre is wasted in adjoining fields, and when they could produce hemp enough within six months to bind the wheat of the world. The cotton growers want to go to India for jute, which will grow in their cotton fields as readily as weeds. If we will not produce the twine to bind our sheaves, or the jute or hemp or flax to cover our hales, we shall have no right to complain of fifty cents per bushel for the one or five cents per pound for the other.

"During the last ten years more than two million workers in agriculture, armed with improved implements, have been added to the seven millions that were making corn and wheat and cotton; and shall they still insist on the same limited range of effort, walk in the same furrows their fathers turned, and seek to live and die in the same overdone and profitless routine? If so, agricultural depression will become chronic and intensified to a degree unknown at present. Shall farmers hug the chains of their dependence, limit the range of their industry, refuse to strike out into new paths, and sink into comparative idleness and poverty? There are millions of them too intelligent and enterprising and ambitious to co-operate in any such scheme of self-degradation."

FARM AND FIRESIDE.

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Our Farm.

AGRICULTURAL CHEMISTRY

From the Standpoint of the Practical Farmer.

BY JOSEPH (TUISCO GREINER).

No. 31.

ODORLESS PHOSPHATE.—To satisfy several inquirers, I will state that the manufacturers of the "basic slag," in Pottstown, Pa., send out their product under the name of "odorless phosphate," charging \$22.50 per ton for it. The article contains 21 to 22 per cent of phosphoric acid, claimed to be for the most part immediately available. If this be true, we get our phosphoric acid (at 5¼ cents per pound) in this article reasonably cheap. It may be worth the trial. The manufacturers also intend to establish large factories in other parts of the country, notably in the north-west, and altogether it seems that we have here a source of phosphoric acid which will become important, especially for many sections, which, remote from the sea-shores, have heretofore been practically excluded from the benefits of phosphatic manures on account of the heavy tariff levied upon commerce by transportation companies.

For some time I have been wishing that the United States might make themselves independent of foreign countries so far as the supply of basic slag is concerned. Now this wish is fulfilled. We manufacture our own supply. What good is it to the farmer? The foreign article has heretofore been sold in New York for \$15 per ton. Now, one of our American citizens has obtained a patent on this new article of commerce (odorless phosphate), and offers us the material at \$22.50 per ton, or at an advance of 33¼ per cent. The American farmer objects to a tariff on his raw materials of crop manufacture, simply because he cannot afford to pay it, and the low price of his products would not allow him to do it. The patent on "odorless phosphate" has virtually the same effect as an import tax on it would have. We simply pay a tribute of \$7.50 to somebody for every ton of the basic slag we buy. But there is no help for it. Perhaps this is one of the American infant industries which needs fostering and nursing for awhile. As for the present, however, we have flapped out of the frying-pan into the fire.

PLANT FOOD AT AUCTION.—A few days since I attended an auction in my neighborhood, not because I am in the habit of going to every auction held within my reach, or of buying lots of things for more than they are worth (simply for the

reason that they can be bought on long credit), but because I wanted some of that nitrate of soda to be sold there. The owner, a very successful fruit grower, and also an enthusiastic reader of FARM AND FIRESIDE, having sold his fine farm, had to dispose of all his bulky goods preparatory to his removal to the far West. Among other things, a ton of high-grade, special vegetable fertilizer (Crocker's, of Buffalo), worth \$36 per ton, came under the hammer, and was sold for \$17, only one person among a great number of farmers and fruitgrowers of the neighborhood bidding against me. I did not really want it, having made other preparations for my fertilizer supply already, else I would not have let the other party have this amount of raw material at one half its real value. When the 1,500 pounds of nitrate of soda, worth nearly \$45 at lowest dealer's rates, came to be sold, I started with a bid of \$5. Now, in all that crowd of "progressive" fruit growers and farmers there was not one to raise this first bid of \$5. So the nitrate of soda was not struck off, and I afterwards bought the lot at private sale at a reasonable price. I did not want so much of it, but thought it was offered too cheap to miss the chance of buying it. The incident seems to show, however, that the average soil tiller has not yet learned to appreciate the real value of plant foods. I hope to be able to

simply enormous and even ruinous. The soil in Virginia and elsewhere, impoverished by long cropping with tobacco, will not be restored to fertility by applications of simple phosphates. Potash alone can help them. For soils in this condition, let our Virginia friends try muriate of potash or kainit, or cotton-seed hull ashes, etc. Of course, barn-yard manure in large enough quantities will also have good effect.

MOVING BARBED-WIRE FENCE.

It is often necessary to move a barbed-wire fence from one part of the farm to another. With the appliance described below, barbed-wire fence is one of the handiest of movable fences. For a regular movable fence we use small, wooden posts sharpened at one end, which are easily driven into the ground on our prairie soil, and as easily pulled out again. The wire is loosened from the posts with a common claw-hammer and then rewound on the original spools. Fig. 1 explains the construction of the machine. Fig. 2 shows the parts to be made. Inserted in the crank shaft is a pin, the ends of which project a few inches. The slot is just far enough from the pin-hole so that when the wedge is inserted in the slot, the spool may be held firmly on the crank shaft. Iron clamps fasten the side pieces to the frame of a cultivator or corn plow, from

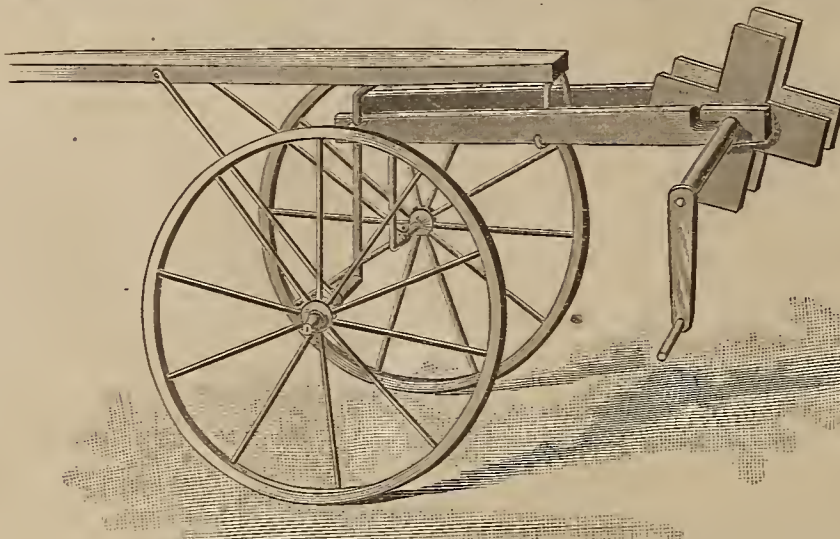


FIG. 1.

tell the readers of FARM AND FIRESIDE, this summer or fall, what effects, in crops and money, can be realized from a single bag of this nitrate of soda.

FERTILIZERS FOR FRUITS.—Writers in the rural press tell what little effects they have had from applications of bone dust or other plain phosphates in the orchard, vineyard or small fruit patch. This is very natural. All fruits and fruit crops require more potash than phosphoric acid, and even where they apparently are doing well, they will usually do still better when more potash is applied. For this reason, bone dust and the like alone are not what is wanted. Add plenty of unleached wood ashes, corn-cob ashes, cotton-seed hull ashes, muriate of potash, or kainit, and you will not be likely to complain of the ineffectiveness of the application. Let fruit growers understand this thoroughly. Simple phosphates are no manure for fruit crops, and never will be. Potash, on the other hand, in any of the forms named, cannot well be applied in too large doses for fruits. Lots of potash makes bush and tree fruits firmer, sweeter, better in flavor, renders the wood more resistant to wind and weather, and is a benefit to them generally, and this without a single drawback. Potash also improves the quality of potatoes, beets, turnips, etc.

This is now pretty generally recognized. The way that our leading fertilizer men put up their various brands for special crops is a pretty good indication of what they think about this subject. There is, for instance, Mr. Mapes' "Fruit and Vine" manure. An average of several analyses gives it 2.50 per cent of nitrogen, 10.20 per cent of phosphoric acid and 10.71 per cent of potash. Evidently, Mr. Mapes (and he is most excellent authority) thinks that potash is the most important of the plant foods in a fertilizer for fruits. The only crop for which he uses a still slightly larger percentage of potash, is tobacco. The demands of this crop for potash are

which the plows have been removed. The side pieces also rest in the hooks which are on most walking cultivators.

This arrangement may have to be modified to suit different styles of cultivators, but the present article will serve as a hint, and the reader's ingenuity can do the rest.

Two men operate the machine, one holding the tongue and guiding as well as regulating the tension of the wire; the other, of course, turns the crank.

Hancock county, Ill. S. D. LINCOLN.

CHANGES IN SHEEP HUSBANDRY.

The progress of sheep husbandry in the United States from the first settlement at Jamestown, Va., in 1607 to the present time, would read like a romance of the olden times. It has been full of ups and downs from first to last; but like the national progress in agriculture, arts, sciences and values, like the growth of civilization and increase of population, it has had a steady growth and development.

We sometimes think the future has no

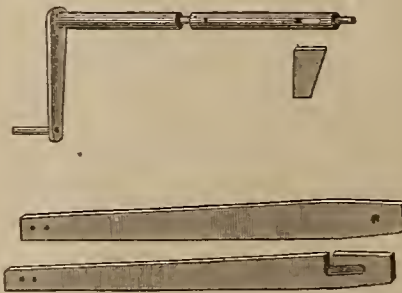


FIG. 2.

"silver lining;" that the depressions are indicative of the euds; that we are doomed to decay and despair. We forget these gloomy forebodings are shared by all the industries, and that at no time in the past have such depressions befallen the sheep interests without valuable lessons. If there was, we could see there was a way out of the dilemma, and that things were not so bad as they might have been. We judge so, because the genius of flockmas-

ters found the means of turning away the threatened disaster and giving new life and prosperity to the breeding and rearing of sheep. We find just such a state of affairs repeating itself, just such wondering, doubting and fears, just such leadings out into new fields and just such reliefs from business, economical and practical methods within our own means. Each one of these periods comes unexpectedly upon the sheep raisers, bringing the same dark forebodings to the average flockmaster; but the more thoughtful few, by recognizing the situation as due to certain causes, turned from old to new methods and found the way to renewed and greater prosperity for the flock products.

Follow me in some of these changes and their causes to their relief. The older states of the Union—Massachusetts, Rhode Island, New Jersey, Vermont, Maryland and parts of adjoining states—were formerly large producers of wool as the sole product of sheep. By changes, hardly necessary to enumerate, there came a time when light fleeces no longer gave a profit, and the improvement of fleeces, especially weights and other qualities, had to be sought for. These were within their own power, and were effectual in turning the scale for a time. But by slow degrees the increase of population and the greater requirements of food for a more cultured and prosperous people, and the necessity for greater fertility of the arable lands, that larger crops might be raised, forestalled the business of wool growing and led to changes which are existing there at this time. The low-priced conditions so invariably found in an undeveloped country have been in those states, as all older countries, unsuited to the raising of wool as a business.

These changed conditions came first to the farmers in the immediate vicinity of cities and manufacturing towns, gradually extending to other districts more removed from centers of manufactures, until now sheep are only profitable in those regions that give the double products of mutton and wool. Sheep have come to bear an important part in the better methods of agriculture, by sharing in the means of higher fertility of the soil, and in giving cash products for the markets of the districts. As the former systems of sheep husbandry have failed to be profitable, resort has been had to mutton as the prime purpose of sheep raising, not alone in the states named, but extending to other districts, and even far distant districts, provided the transportation facilities favored the reaching of eastern markets.

It is a noteworthy fact that all products, including meat and wool, produced on cheaper conditions, at a lower cost of production, affords the more distant raisers, notwithstanding the freights on his products from his home to the city markets, a very satisfactory profit. How far-reaching and how long this state of things will last no one can now tell. Just how the farmer in Massachusetts can compete with the Montana ranchman, in mutton, is to be decided by experience. It now has an ominously dark outlook. Possibly, as in the older states, sheep raisers turned their attention from wool to mutton, when wool was low, and when wool was in demand at better prices they returned to wool growing and let the mutton go. So the West may do, in time, in producing wool, after wool shall be a higher price.

The present extraordinary price of mutton has encouraged this unexpected attention to mutton in the cheaper West. The western and Texas sheep raisers are quick to perceive the opportunity of making money, and with a zeal characteristic of western enterprise, sent forward a better class of mutton and sheep to be fattened on the cheap feeds of the corn-growing states than we expected. If wool had paid better than this, they would have kept their sheep, as wool producers, at home.

As the tide in the affairs of wool flows out again, as it certainly will, absorbing the attention of sheep raisers, we cannot now tell whether or not it shall undo what has been done in mutton extension. It is not likely that the price of mutton can be maintained for any great length of time; nor can it be supposed that the mutton-eating people will return to beef

so entirely as heretofore. We are placing this opinion on the fact that if they did not greatly prefer mutton to beef they would not now be paying more for it than for beef at a lower price than has been known for years. Therefore, we confidently expect that the market price of mutton shall induce the sheep farmers of the eastern and middle states to continue in the new line of breeding sheep, and that instead of wool husbandry we shall persist with greater energy in a mutton husbandry as especially suited to the needs of a more progressive and profitable agriculture than has been counted on in this country.

I think the FARM AND FIRESIDE is emphatic in the opinion that good, clean, profitable farming can only be in direct connection with sheep raising, and that mutton husbandry as far exceeds the plain wool husbandry, on high-priced lands, as market gardening exceeds the raising of corn. As the sheep business shall readjust itself to the situation of the country, there can be no doubts as to the future status of sheep husbandry in this country. We have been driven from former one-idea sheep raising to a more fitting and varied sheep husbandry that has been demonstrated to be able to maintain profits when wool growing on high-priced land failed to do so. This is not a little humiliating to Merino sheep raisers of the old school, but facts are stubborn and cold opponents. It has been fully demonstrated during the last four years, not alone in Massachusetts, but also in Montana. The mutton industry has been introduced into regions, and secured a firm footing, where wool growing had long been abandoned, as well as sheep raising entirely.

This is very acceptable to the farmers, since it enables them to lay their over-cropped lands in raising corn to pastures and meadows. The corn crop has been too absorbing and exhausting an industry. It has been compelled to compete in the markets, too, with the cheap western districts at the most ruinous prices. The feeding of sheep at home, on home-grown feeds, offers a most desirable release from hauling off the feed crops at low prices, and leaving neither profits nor fertilizers for the farmer as a guarantee for future crops. It also comes to these regions as a remedy against further depletion of fertility of farms. It is apparent on the rich prairie farms of Illinois that we raise less crops than formerly, and that crops are more uncertain now than forty years ago, and that it is for lack of fertility.

Mutton sheep husbandry belongs to high farming, and this alone is profitable farming on the long-farmed lands of the United States. If out of this long, tedious depression in wool raising in this country there shall come an intelligent, progressive mutton husbandry, we shall have secured ourselves largely against future depressions and accompanying losses.

TREE PLANTING.

How many of our readers have celebrated Arbor day? I have seen so many beautiful trees cut and mangled, torn from their places by main force, with the tap roots split or bruised, that I would like to tell you of a better way.

Evergreens have a resinous sap, and a very few minutes exposure to the hot sun or to wind will harden it so it cannot support the tree. After you take the tree from the ground, be sure its roots are shaded or covered with earth; it is much better to prepare the places in which they are to stand before you dig the trees.

A rule we have followed with great success is, to dig a trench clear around the tree, as far from it as the tips of its outer branches and as deep as you can work conveniently, according to its size. You will then have room enough to work underneath. In taking out the earth towards the center of the circle, be careful always to turn the edge of the spade towards the stem of the tree, to avoid cutting the roots, and take out with it all the earth you can.

Trees procured from the nursery are properly taken up, and, if set out as they should be, will usually grow; but do not dig a hole in the sod a foot or so wide and crowd in the roots upside down, or cross-

wise, and then say the dealer sold you trees that were "good for nothing," and you'll "never deal with him again."

One of my neighbors bought seven apple trees of a dealer; another, who thought he "couldn't bother with so few," ordered one hundred. When they were delivered, the former carefully followed the directions on his card, and the latter, hurried with spring work, put his out without plowing the ground, digging small holes in the sod, as quickly as possible. This spring the seven trees are fully four times as large as when purchased two years ago. The owner said to me, "I would rather have my seven trees than A's one hundred," and as I looked at A's I could agree with him, for there are only seven trees left alive, and they are very little larger than when set out.

Set your trees in large, shallow holes no deeper than they grew, and fill up with rich, mellow soil, spreading the roots out naturally and tramping the soil down firm. Add a good mulch of straw or leaves, tie up to stakes and cultivate enough to keep the weeds out. Of course, climate and situation have a great deal to do with the result, but it is wonderful how trees and shrubs will adapt themselves to changes if they have a fair chance. If you can only set out one tree every year, do it well, and when you are old you will bless the man who first thought of Arbor day.

MARBLE MAY.

A BAG HOLDER.

I send you a model of a bag holder which I use in my grist mill, and think it is the best I ever had. A is the stud or side of granary; B is a cleat with a bevel at the top, nailed to the stud; C is the holder, with ten-penny wire nails to hold the bag; D is a cleat on the back of the board which holds the bag. This cleat is the same as the one nailed on the stud. When in use, this cleat fits on the one on the stud. This holder can be used anywhere. I have five cleats in my mill and only the one bag-board.

J. H.

Sag Harbor, N. Y.

THE PORTABLE CREAMERY.

BY C. L. AMES.

Of all modern inventions in the dairy implement line, the deep-can method of setting milk takes the lead; and the portable creamery as now manufactured is the most convenient and economical way of using the deep cans.

WHAT IS A PORTABLE CREAMERY?

It may be defined as a water-tight box with a cover, holding deep cans in which milk is set as drawn from the cow, and the box filled with ice water or cold well or spring water. That was the original style of making portable creameries, and while it was a great improvement over the shallow-pan setting, it involved considerable labor and bother in lifting in and out the heavy cans of milk. So inventors improved this crude creamery by fastening the cans in the tank and providing faucets for drawing off the milk and cream at the bottom of the cans.

HOW IT WORKS.

It is found that if warm, fresh milk is put in a deep can set in ice water, the milk being rapidly cooled, the cream being much the lighter will rise rapidly to the top, so that in a few hours—from four to eight—the cream is all up and can be skimmed and the can used for a fresh

setting. Practically, the skimming is done in the morning and at night in time for the next milking to be set.

ITS ADVANTAGES.

Instead of a lot of pans, crocks or pots to be washed, scalded, sunned and handled in various ways, one to three or more tin cans are used and not handled or sunned at all, as the milk never sours in the creamery when ice or cold water is used, consequently there is no danger of particles of sour milk remaining in the cans to start fermentation in the next lot put in. Then the skimmed milk is sweet to use in the house or to feed; the skimming is done by simply opening a faucet and letting the milk run out, a small, glass window in the can showing when the cream reaches the faucet, when it is closed, and the cream-pail being set under the faucet, it is again opened and the cream runs out. That is the whole process, but it does not give a good idea of the

GREAT SATISFACTION

In knowing that the cream will always be the same both winter and summer; in winter there will be no freezing, with the resulting poor butter, no thunder-soured milk in summer, no flies in the cream (the cans have covers provided with fly-proof ventilators), no suicidal mice found in the cans in the morning when going to skim, no cats gently lapping up the cream, nothing that is disagreeable, but a good, satisfactory time right through the whole year. But the portable creamery can be used

WITHOUT ICE

If that is not to be had, though it may be said here that no farmer will ever regret building and filling an ice-house, if he lives in a climate where ice freezes three inches thick. Thicker ice is better, of course, but this thickness, or even less, will do if no thicker is made. Apart from its value in the dairy, ice is found so useful in the house that there alone it will pay for its harvesting. If there is a good well or spring, the water about 55° in temperature, it can be used with perfect success in the creamery, but it will take longer to raise the cream, and the creamery should be large enough to hold two milkings, so that the milk can remain in the creamery twenty-four hours before it is skimmed. If the water at 55° can be conveyed to the creamery without loss of cold and allowed to run through it all the time, then the cream will all be raised in twelve hours, or between milkings.

SOME MINOR POINTS.

Some of the portable creameries that are made in the cabinet style have the space under the cans enclosed with double walls, and this apartment can be used as a refrigerator to keep the cream in during hot weather. The temperature of this refrigerator is about right to properly ripen the cream in summer, when only two churnings a week are made. It is also a convenient place to keep butter for home use, or while waiting to send it to market. A dish of strawberries or other fresh fruit can be set there to cool, and it will not injure the flavor of the cream. If some skimmed milk is wanted before milking time, it can be drawn without disturbing the cream; a glass of cold milk in harvest weather is nice, but it won't do for the whole family to have the free run of the creamery, because they might, if all milk lovers, not use a proper discrimination in judging when the cream line was in sight, and drink the cream also.

QUANTITY OF CREAM.

The quantity of cream as raised in a portable creamery exceeds that raised in shallow pans from the same quantity of milk, but it is much thinner, and though shallow pans will raise all the cream when the conditions are just right, yet it is impossible to always have them right, whereas, the conditions can be controlled to a nicety in the creamery and the user can be sure of not only getting all the cream from each milking, but of getting the same quality. While the quantity of cream raised in a creamery is large, the quality is good, and if ripened properly will make perfect butter. In fact, one of the great advan-

tages of the creamery is that the butter can be made of a

UNIFORM QUALITY

The whole year, because the cream itself is uniform and only bad management after it is skimmed can make a change for the worse in the butter. And here there comes another source of profit; if the butter is always of the same good quality there will be no difficulty in selling it, no apologies will have to be made because the weather was too hot or too cold. The milk once set in the creamery is not affected by the state of the weather.

SELLING CREAM.

If butter is not made at home and cream is sold to a public creamery or to private customers, the price can be fixed for a certain grade of cream, and it can always be furnished of just that exact grade; it will not be thick and leathery one time and thin the next; the customer will know just what to expect, and, if the creamery is managed right, he will get just what he wants every time.

SELECTING A CREAMERY.

In buying a creamery, some important points are to be taken into consideration. So far as raising the cream is concerned, all creameries will do that, but some are capable of raising the cream in a shorter time than others and are much more convenient to manage. The tank should have room to put in large pieces of ice, and yet not so large that there will be too large a body of water to cool; the faucets, if outside the creamery, are handier than if they are placed underneath the cans in the refrigerator, and the glass window for observing the cream line when skimming should be so placed that it can be readily seen, and if there is no water space between the glass and the milk, all the better. The faucets should be made of brass and so constructed that there will be no danger of leakage, and also be easily removed for cleaning. The whole creamery should have double walls, with an air space to prevent the loss of cold, and should be well and substantially made.

WILL IT PAY?

If the advantages already mentioned that a portable creamery has over the old-fashioned method of milk setting are real—and thousands can testify that they are—then it will be readily seen that in taking the dollar view of it alone, it will pay to buy a creamery. But though the dollar is the standard by which all business transactions are measured, yet there are other considerations which should weigh in the matter; one only need be mentioned at present, and that is the benefit to the

FARMER'S WIFE.

Many a farmer's wife is to-day caring for the milk of a herd of cows and setting it in heavy stone crocks or pots. Twice every day these pots have to be lifted to be washed, scalded and aired, filled with milk and set away. The amount of human strength, of woman strength, required to do this work, if put into easily understood figures, would astonish any one who has not given the subject much thought. The injury to a woman's, a mother's health, cannot be put into figures, but the work can and no doubt often does put the woman herself upon a bed of sickness, or into the grave long before the time when from natural causes she would go there.

STILL THE DOLLAR.

So, still using the dollar standard of value, the doctor's bill alone—if that should be the worst expense—would often more than pay for a first-class portable creamery.

Lyons, Iowa.

DO YOU WANT \$1,000?

You have just as good a chance as any one to secure this grand prize offered by the Bowker Fertilizer Co., of Boston, Mass., for raising a good crop of potatoes. See their advertisement in another column. Write them for particulars, and mention the FARM AND FIRESIDE.

Our Peerless Atlas of the World receives high praise from all quarters. Agents make big wages selling the Royal Edition in handsome, substantial binding. Write for terms.

Our Farm.

FARM AND GARDEN NOTES.

BY JOSEPH.

POTATOES DETERIORATING.—My friend, Mr. L. B. Pierce, felt called upon to dispute, in the weekly *Tribune*, the correctness of a statement recently made by me, to the effect that the potato, as a plant, has been deteriorating very materially during the past fifteen or twenty years. As evidence of this I had introduced the fact that the potato plant at the East has lost its perfect bloom, ceased to produce true seed, and decreased in yield, notwithstanding our modern improved methods and implements of culture. Mr. Pierce, however, considers the potato as vigorous as ever, because he learns that some of the New Jersey market gardeners, on their highly-manured soil, are yet able to raise a crop of 250 bushels of the newer potatoes per acre, the same as was done with the Peachblow when in its prime twenty years ago. The eighth annual report of the New York Agricultural Experiment Station (Geneva, N. Y.), just published, throws some light on the disputed point. On page 32, in a table of average acreage of leading crops, that of the potato is given as follows:

For the period 1862 to 1879,	103.1 bushels.
" " 1871 to 1879,	81.7 "
" " 1880 to 1887,	77.4 "

This represents a dropping off in yield to 75 per cent in only seventeen years, and seems to substantiate the "deterioration" pretty authoritatively.

I do not believe that many of our readers will question the fact very much that the potato plant has been weakening of late, and is still losing vigor. This is a serious matter. We must oppose this downward tendency in the potato plant, and restore it to its former vigor, or else try to find a fresh substitute as a popular food for the one now seemingly giving us the slip.

I yet believe (and strong evidence supports it) that close cutting of the seed, especially to single eyes, which has been so widely practiced in recent years, is one of the leading—and probably the most potent—causes of the weakening of the plant. We should now turn our efforts in the direction of raising "pedigree" seed. By whatever methods of cutting, seed and culture we may raise our crops for market, our potatoes intended for seed should be grown from whole seed tubers, and under high and careful culture. If we continue to give this treatment, it would soon secure to us pedigree seed worth having, and a return to the original vigor of the potato plant. It's worth the trial, and what is more, we will have to come to it. The sooner we recognize this the better for us.

BEAN GROWING.—Several subscribers are asking for an article on bean culture. I do not think that I can say anything new on the subject, and the whole business is simple enough any way. Select soil that is at least of medium fertility. There is plenty of land nowadays too poor to raise white beans. Don't plant it in the supposition that it takes poor soil to raise good beans. On the other hand, this crop does not require very rich soil nor nitrogenous manures. There are fields on almost any farm on which profitable crops of wheat, oats, corn, potatoes, etc., could not be produced, yet which will do well when planted to beans. If any manure is applied—which, in the majority of cases, is hardly necessary—let it be wood ashes, or potash in some form, with or without some simple phosphate, as the case may require.

There is no need of being in a hurry about planting. After corn and potatoes and crops of that season are in the ground, and perhaps even well under way, it is plenty early enough to plant beans. Prepare the land as you would for corn or potatoes, mark out furrows three feet apart, and plant seed by hand, or with a seed drill, thickly enough to insure a full stand, and have at least one plant to remain every six or eight inches of row. Begin cultivation early, and keep it up enough to prevent weed growth. Little else is needed until the beans are ripe, as shown by the dry pods and wilted leaves, and the plants should then be pulled up

by hand, piled in a stack around a six or eight-foot pole stuck in the ground, and left there to cure. It is important to harvest the crop early, and before the arrival of the rains and cold spells of fall. At a convenient time (when dry), the beans are taken to the barn, threshed, cleaned, by running through a fanning-mill, and picked over by hand, when they are ready for market. Where grown on a large scale, the use of one of the newly-devised bean harvesters will greatly simplify and cheapen the cost of gathering the crop. In places where bean weevils are liable to attack the crop, the grower must take pains to plant seed untainted by the presence of bugs, and select fresh land on which to plant. Strict rotation is good for almost any crop.

Bean culture is an important branch of farming. In many instances it can be

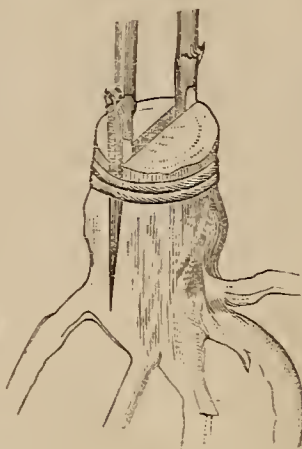


FIG. 1.



FIG. 2.



FIG. 4.



FIG. 5.



FIG. 6.

made remunerative, and certainly more so than wheat, oats and corn growing, especially when carried on as at the East, on a comparatively small scale. So long as the United States import beans from abroad quite largely, both for food and seed, it seems that we might pay more attention to this product. The straw is also valuable, especially for feeding sheep, who eat it readily and thrive on it. Where no sheep are kept, the straw may be used for an orchard mulch and fertilizer. The white Marrowfat, the Pea and the Navy bean are the sorts usually planted in field culture. Kidney beans are sometimes very profitable, but the market is more liable to be overstocked with them than with the other varieties named.

Orchard and Small Fruits.

CONDUCTED BY SAMUEL B. GREEN.

ESSENTIALS OF CLEFT GRAFTING.

The essentials of cleft grafting are a healthy and congenial stock and scion, proper season and right manipulation. Cleft grafting is the form of grafting generally used when large trees are to be worked on. The season varies somewhat for grafting different species of plants. Plums and cherries are most successfully grafted before growth starts in the spring. Apples and pears should be started a little before being grafted, and grapes may be best grafted very early, before sap starts, or late, after the vine is in blossom, by which time the first strong flow of sap has much lessened. Varieties may be grafted together successfully, but different species, as a rule, do not do well when grafted. There are some exceptions to this rule, for some kinds of pears do best on quince stocks, but apples do not do well on pears or on the thorn, although the wood may unite and the graft be fruitful. Apple may be grafted on quince or on Juneberry, but such grafting is more of the nature of curiosities than a utility.

To illustrate the subject of cleft grafting, we will want to graft our old Janesville grape with some variety like the Moore's Early, which is about as early and much better in quality than Janesville, but not so productive. Or, perhaps we shall think it best to graft with the Delaware to increase the size of the berries and bunches, and it should be known that the Delaware is much improved by putting it on a strong, vigorous root.

Grafts of American grapes are much

more uncertain to succeed than those of apple, pear, quince or plum, and while these latter may be grafted up in the tree, and succeed well, it is found best to graft the grape just below the surface of the ground, as follows: The earth is drawn away from the root, and the stem is cut off a few inches above the root, as shown in Fig. 1. If the stem is straight-grained, it is now split with a knife or grafting

of clay for a covering for grape grafts. In grafting trees, the unions are covered with grafting-wax.

When the stocks are small, they may be grafted as shown in Figs. 4 and 5. Fig. 6 shows a grape scion grafted on a cutting, and this plan is successfully followed in France, where it is found the European grapes graft more readily on American stock than do American grapes themselves. Such grafts are made there by the million in a way similar to that used here on the apple. In all ways of grafting the grape, the scion should be dormant. In grafting all trees but our stone fruits, the stocks should be a little started before being operated upon. In grafting stone fruits, the graft or scion should be about equally started.

INQUIRIES ANSWERED

BY SAMUEL B. GREEN.

Raspberries After Buckwheat.—C. E. C., Monterey, N. Y. There would be no objection to having black raspberries follow after buckwheat stubble, but the stubble should be well plowed in and thoroughly harrowed. Of course, I suppose you know that raspberries need a fertile soil.

Raising Raspberries.—F. S., Winesburg, Ohio, asks: "Will it pay to raise raspberries on a south-west hillside, which produces about one ton of hay per acre?"

REPLY:—Yes, if you have other proper conditions, such as a good market, etc., but the hillside should be made rich enough to produce three tons of hay per acre before planting raspberries on it.

Location for Fruits.—L. K., Miltonvale, Kan., writes: "Please tell me where grapes and strawberries do the best—whether on eastern, western or northern slope."

REPLY:—Of the three locations which you mention, by all means choose the eastern for a vineyard, and such slope is also good for strawberries, though if you want your crop to come in late, a northern slope is better.

Ever-bearing Raspberry—Blackberries and Strawberries in the Shade—Native Plums—Implement for Cutting Dead Raspberry Canes—Lucrative Dewberry.—Mrs. I. S. Miami, Ind. There is not a successful ever-bearing raspberry in cultivation. There are some that produce a few berries on the new growth in September, but in all cases the old cane dies away the same as in any raspberry. The Snyder, or any other blackberry, will do well in partial shade if on good soil, but it is easy to shade them too much. Strawberries also do well in partial shade, but better when in full light. By native plums is generally meant varieties which have originated in this country from seed of our native wild plums. These are of three kinds, *Prunus Americana*, the wild plum of the northern tier of states and of Canada; *Prunus Chicasa*, the wild plum of Missouri, Texas and even farther north; and the *Prunus maritima*, or beach plum, found along the sea coast. The simplest form is made by setting a curved, hook-like chisel in the end of a large hoe-handle. This chisel may be made out of a piece of old scythe by any good blacksmith. It should not stand out over two inches from the handle. No, the old canes on the Lucrative dewberry should be cut away. New plants are easily started by covering the new growth with soil in August, in much the same way as with black raspberries.

SOME farmer is going to receive a big prize by raising a good crop of potatoes, and you can learn all about it by mentioning this paper and addressing BOWKER FERTILIZER CO., BOSTON, MASS.

The ELKHART CARRIAGE & HARNESS MFG. CO.



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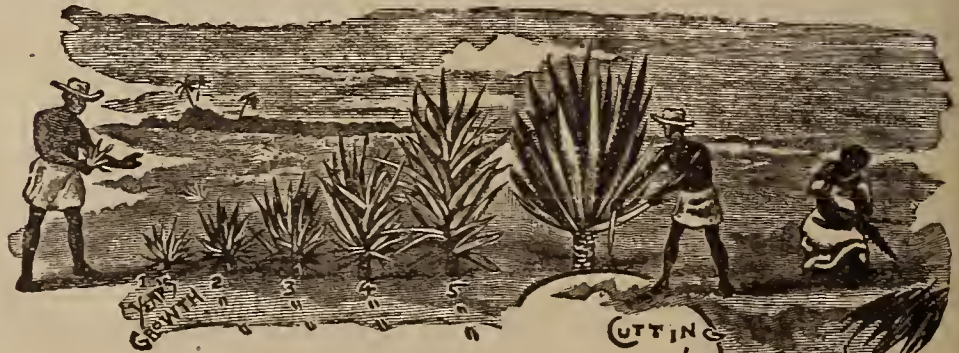
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The only Binder Manufacturers in the world who make their own twine.

WM. DEERING & CO.,
Chicago, Ill.

EXTRACTS
FROM CORRESPONDENCE.

FROM IDAHO.—Our prairie, twenty by thirty miles, has a soil of vegetable mould, and produces good crops of wheat, oats, barley and timothy. Farming is not carried on very extensively. There is a good deal of mining done in this country, with good results.

Grangeville, Idaho.

W. F. M.

FROM SOUTH DAKOTA.—The soil of Sully county is a black, rich, sandy loam. The surface is just rolling enough for good drainage. The sod is very hard to break on the ridges, as it is mostly bunch grass, but the lower lands are easy to break. We can raise a good crop of corn the first year, and a crop of wheat the second year, before it is back-set. By that time the sod is well rotted. Land is worth from \$300 to \$2,000 per quarter section.

Okoboji, S. Dak.

A. E. F.

FROM ARKANSAS.—Benton county has a variety of rich soil and a pleasant climate. The thermometer seldom falls 5° below zero, and never rises above 90°. We have an abundance of good water, springs, wells and crystal streams. This is called the apple orchard of America. We can raise all kinds of fruit in abundance. We also raise good crops of corn, wheat, oats, tobacco and potatoes, as well as clover, grasses and vegetables. Land sells from \$5 to \$50 per acre.

Decatur, Ark.

J. H. S.

FROM OKLAHOMA.—This beautiful land is about equally divided between timber and prairie. The soil in the bottoms is very black and heavy; that of the uplands is lighter, and underlaid with a tough clay, which makes excellent brick. Nearly every quarter section has a spring. The timber is only fair. The climate is good. Corn that was planted on sod the middle of May yielded from 25 to 30 bushels per acre. Vegetables do remarkably well. This country has a yearly rainfall of about forty inches. Come and see our new country. It will do you good to see the magic city of Guthrie, with its population of 7,000.

Seward, Ind. Ter.

J. C. S.

FROM WEST VIRGINIA.—The southern part of this state is very hilly, and is covered with large timber, such as walnut, ash, poplar, maples, oaks, pine, spruce, beech, birch, linn, buckeye, etc. Coal is abundant. Water is pure and never failing. Our soil produces almost anything you want to raise. We have a temperate climate—no blizzards nor cyclones—and as healthful a country as I ever saw. Our country is sparsely settled with sturdy backwoodsmen. This country is fast coming to the front as a mining center. Capitalists are drifting here. A few steam saw-mills could do well along the railroad line.

Morgan Valley, W. Va.

J. L. P.

FROM MINNESOTA.—Lyon county has a fertile soil, and is thickly settled by prosperous farmers. Good crops have been raised for several years, but stock has decreased in value. A good cow sells for \$15. Wheat is now selling at 62 cents per bushel; oats, 25 cents; corn, 28 cents; potatoes, 35 cents; beef, 2½ cents a pound; pork and mutton, 3 cents. Hay is worth \$4 a ton. Flax and barley are raised, but not extensively. Few fruits or berries are raised, the climate being too severe. The Farmers' Alliance has a large membership here. Improvements are being made, and our county bids fair to be one of the richest in south-western Minnesota.

P. E.

Amiret, Minn.

FROM NEBRASKA.—Nearly every quarter section in Wayne county is improved. Wheat, oats, flax, barley, rye and millet do fairly well, but corn is our main crop. It yields from 35 to 65 bushels per acre. The largest yield of wheat that I know of in 1889 was 30½ bushels per acre, and in 1888 I threshed wheat that yielded 3 bushels per acre. Corn is 13 to 15 cents per bushel, and consequently, times are a little hard with most of us. There are more cattle fed and shipped from Wayne than from any other town in this part of the state. Land sells from \$12 to \$30 per acre. Wells are from 12 to 100 feet deep. I have been in north-east Nebraska twelve years, and we have always had a fair yield of crops.

W. C. J.

Wayne, Neb.

FROM SOUTHERN OREGON.—Jackson county, Oregon, is not in "Webfoot," by 250 miles, and the storms of this winter are without precedent. Rogue river is in the thermal belt, which is the happy mean between severe drouths and the excessive rainfall of "Webfoot." It has a better climate than either. Webfoot's rainfall is less than that of the greater portion of the Mississippi valley. We are not in the wild duck and goose business. These birds go down from Washington and other northern countries to winter in California, because only during that season can they live there. To avoid death from starvation, malaria and alkali, they return in the spring. I maintain that we can raise better peaches, pears, grapes, apples, prunes, plums, hay, grain and vegetables, including watermelons, than can California, and am willing to match products in September at any point you may select. The best melons of Oregon

are raised in Jackson and Josephine counties, Portland commission merchants being the judges.

S. M.

Spikenard, Oregon.

FROM OHIO.—I live at the head of the great Scioto marsh, in Hardin county, and I claim that here is the most profitable land on earth—black, rich, loamy soil, underlaid with gravel and a bed of marl. The soil is from three to eleven feet deep. We raise two to four hundred bushels potatoes per acre, five to eight hundred bushels onions, and we beat Michigan for prime celery. Our land never suffers from drouths. This is the greatest advantage we claim, yet our soil is not easily made too wet, as it is like a sand pile against wet. We have flowing wells of pure water, fine health, good shipping points. There are yet plenty of places for renters or buyers. In the near future this will be the garden of Ohio.

Kenton, Ohio.

H. P.

FROM KANSAS.—Rice county ranks among the first for agriculture. Anything grown in the temperate zone does well here. The crops last season were good; wheat yielded 30, oats 60, corn 40 to 50 bushels per acre. We have good schools and churches, and a climate unsurpassed. Sheet water is found at a depth from 5 to 40 feet; it is very cold and pure and never fails. Our prohibition law is enforced to the very letter, and everybody is happy and contented. Land sells from \$10 to \$30 per acre. We have salt at Sterling and Lyons; salt sells at 15 to 30 cents per 100 pounds at factory. Our fuel is cobs and coal; both are abundant; we get our coal from Osage, Pittsburg and Ft. Scott, Kansas, and it sells from \$3.50 to \$5 a ton. All kinds of stock are being improved very rapidly. The Farmers' Alliance is well organized in all parts of the county, and is destined to be a power, with proper management. Their weight is already being felt.

Chase, Kansas.

J. A. L.

FROM WISCONSIN.—Winnebago county is one of the most populous counties in the state. The land is slightly rolling, very productive, and worth from \$60 to \$90 per acre. There are many large saw-mills in this county, some with a capacity of from 60,000 to 100,000 feet per day. Some of these mills use the gang saw, and some are using band saws. The sawdust is used for fuel. The logs for these mills are brought from the northern part of the state. The climate is healthy, but very cold in winter and warm in summer. One of the farmers here has a round barn, 54 feet in diameter and 16 feet high. It will hold 30 head of cattle, and 50 tons of hay. The cattle stand with their heads to the center, and can be more easily fed. The roof is arched so that the barn cannot get out of shape from weight on the top, or pressure on the inside. It takes the least possible amount of lumber to build the barn. These are some of the advantages claimed for this barn.

Winnebago, Wis.

A. B. M.

FROM MISSISSIPPI.—Many of our fine, summer boarding houses are kept open during the winter, to accommodate hundreds of northern visitors, who find this such a pleasant winter home. The climate is very mild. All kinds of vegetables, grapes, berries and fruits (except oranges) do well here. The Scuppernon grape, from which an abundance of fine wine is made, is grown very extensively. Corn, oats, rice, millet and other grains do well. The bayous afford fine sites for saw-mills, etc. Many acres of fine clay land, from which bricks were made that took a prize at the New Orleans exposition, border on the bayous and river. Thousands of acres of land, mostly pine forest, lie behind Bay St. Louis. The trees alone on this land are worth a fortune. Land sells from \$5 to \$20 per acre. All that is needed to make this place a perfect Eden is a number of energetic business men who are not afraid to invest a few dollars in some industry. This is the very place for poultry and stock raisers. No great amount of capital is needed, but sound judgment and indefatigable energy are what we need and must have.

Bay St. Louis, Miss.

C. B. B.

FROM MISSOURI.—Macon county is a splendid country for farming and general stock raising. It has a charming landscape, equable climate, generous soil, fruitful orchards, matchless grasses and grain fields, abundant water and cheap land. It is on the divide of the great Mississippi and Missouri rivers, 800 feet above tide water. The productions are wheat, corn, oats, rye, barley, buckwheat, tobacco, broom corn, millet and sorghum. This is the home of the apple, the grape, and the strawberry. All kinds of fruit grow to perfection with proper care. Mixed farming pays the best. I have raised 48 bushels of wheat, 60 bushels of corn, and 2½ tons of timothy and clover to the acre. Stock does well on Blue grass and hay the year around. Health is good and society is good. The market is good for anything from a dozen of eggs to a pair of driving horses. There are buyers for everything at the eastern market price, less freight and a small margin for the shipper. We have both timber and prairie land with a black soil. There is plenty of wood, coal and stone. Considering the soil, the health and the market, land is cheap. Good farms can be bought for from \$10 to \$30 per acre, accord-



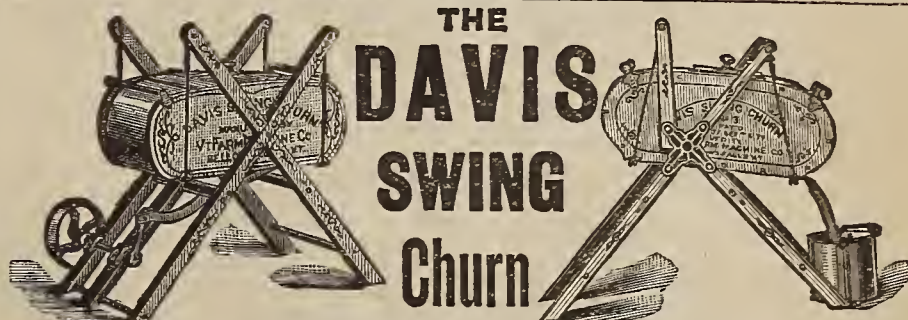
Photograph of Potatoes raised on STOCKBRIDGE POTATO MANURE exclusively, winning the Grand Prize of \$1,000, over all other fertilizers, for the best acre. Yield, 738 bushels.

The Stockbridge Manures stand over 90 per cent on a scale of 100 in SOLUBILITY; and Solubility in a Fertilizer means the Greatest Success in Growing Crops.

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From the Largest Butter Factory in Mass.

I have used the Davis Swing Churn for the last eight years—Nos. 8, 11 and 13—with the best of results, securing the First Premium at Rhode Island State Fair in 1888. The Gold Medal, two First and one Second Premium at the Bay State Fair in Boston, 1889, with butter made with these Churns. Cannot speak too highly of the Churn.

Conway, Mass., Nov. 23rd, 1889.

W. A. PEASE, Supt. Conway Co-operative Creamery.

From the Largest Butter Factory in Conn.

Having used the Davis Swing Churns for nearly seven years in our factory, we take pleasure in saying that they give perfect satisfaction, and we consider them pre-eminent over any Churn used for Creamery purposes.

Melrose, Conn., Feb. 19th, 1890.

A. M. BANCROFT, Supt. Ellington Creamery Co.

Eighty lbs. in Davis Swing Churn as easy as 40 lbs. in Barrel Churn. The No. 8 Churn purchased of you gives entire satisfaction. We churn 80 lbs. as easily as we did 40 pounds in the Barrel Churn. The self-ventilation not only saves much trouble, but improves the quality.

No. Hartland, Vt., November 10, 1887.

G. GATES & SONS.

Tried the Barrel and Davis Swing Churns Together.

The Davis Swing Churn I purchased of you in the spring of 1888, far exceeds my expectation. I was strongly inclined toward a barrel churn, but after using both thoroughly shall take the Swing Churn every time. It is easy to operate, easy to clean, and brings just the right kind of butter every time.

Derby Center, Vt.

M. A. ADAMS, Clover Hill Farm.

Quicker and Easier than the Barrel Churn.

The Swing Churn is a grand contrivance, it is both easier and simpler to work than the ordinary barrel churn, and brings the butter quicker and better and washes thoroughly.

Naiwawai, New Zealand, August 8, 1888.

F. BENTON, Jun.

SEND FOR ILLUSTRATED PAMPHLET. FREE TO ALL.

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

ing to location and improvements. Corn is selling at 30 cents, wheat 65 cents, oats 17 cents, rye 60 cents per bushel; hay from \$5 to \$6 a ton; cows \$25 to \$35; cattle 3 to 4 cents per pound; hogs, fat, \$3.65 per hundred weight; good horses \$80 to \$150; mules \$75 to \$150.

Macon, Mo.

G. W. D.

FROM ILLINOIS.—Wayne county is in that part of Illinois that is known as Egypt. The country is quite rolling, enough so as to drain well. We have a good soil, which produces well anything and everything that a farmer would wish to produce. We are just on the line where fruit can be grown to perfection. Our fine apples are [abundant proof of this; fruit men come here from Chicago, Cincinnati and even New York, in the fall, to buy our apples, and I have heard these men say that this country produced as fine apples as any place in the United States. We have some very large orchards in Wayne county; it is not an uncommon thing to see 80 acres in one orchard, and we have some of 160 acres, and thousands of acres are being set out in apples and peaches this spring. Farmers are going into the fruit business. From the foreign reputation of our apples, we are encouraged to believe that we never will be able to supply the demand. Our county is well timbered. It is about equally divided between prairie and timber; the timber land is especially adapted to corn, wheat and clover. You can get good land at from \$10 to \$40 per acre.

Mount Erie, Ill.

J. W. S.

FROM KANSAS.—Interested parties, particularly land and loan agents, who, by the way, have the grip on most of the improved farms, are now sowing broadcast specially prepared sheets showing up the great advantages of this state in all the glowing colors, withholding its many drawbacks. This county is, without doubt, as good as any lying east of the ninety-seventh meridian, and as yet is not over half settled up. Its soil is everything

from sand to heavy gumbo. A small portion of it is too light for any use and some too heavy for only special use. Every school district has a school-house and good schools, though the attendance in many cases is small. The people are temperate, industrious and social. This state raised last season for once, at least, its own corn, and it's a serious question whether every bushel of it ought not to be kept in the state, but from force of circumstances it is largely being shipped out. Stock does well here and hog cholera is seldom heard of. Fodder crops, such as milo maize, sorghum, Kaffir corn and millet, never fail here, while wheat, oats, corn and barley are quite uncertain, though they are extensively planted every year. Water of good quality is reached at a depth of from twenty to sixty feet anywhere. Our drawbacks are, hot, high winds, unseasonable rains, devouring insects, dry winters with sudden changes from warm to cold, inability to raise with success fruit, or timothy and clover hay, high price of building material, heavy taxes and interest. But we have a beautiful country, generally healthy, a bright, sunny sky most of the time, and can live here contentedly were we blessed with laws for the masses. As to the corn crop of 1889. A few of us have worked privately in union to ascertain as nearly as possible the amount raised, and find it to be about 800,000 bushels, instead of 3,000,000, as advertised, which we call a huge crop, as it gives an average of 1,000 bushels to each farmer in the county. Should any of your readers wish to come to Kansas, let me say, don't be fooled by these flaming sheets, but come first and see for yourself, or inquire of some here whose statement you can rely on. But don't think you will find it easy sitting, or all play and no work.

Point View, Kan.

L. W.

THE O. S. KELLY Co., of Springfield, Ohio, is the new name for the Springfield Engine and Thresher Co., the change in name being made to more fully cover the large line of goods that this prosperous Company are now making. At the same time they have increased their capital stock from \$250,000 to \$350,000.

Our Fireside.

WE WANDER BACK TO HOME.

The world's wide path a shining way
May open as we go,
With picture, scene, and colors gay,
From fickle fancy's flow;
But as from ways, once grand and cheer,
There fades each brilliant chrome,
The eyes, afar through filmy tear,
Will wander back to home.

When friendships wane—once real and true—
And coldly glimmer where
The skies have lost their deepest blue
To bring chill shadows there;
One glinting gleam of sunshine, then,
Athwart the sullen gloom,
Will flash bright rays from childhood when
Hearts wander back to home.

Tho' all the world should kindly greet
Each footstep as we stray,
And strew, with garlands 'neath our feet,
The path 'long life's highway;
Yet will the moments brighter seem,
Where'er we, rambling, roam,
When lost in mem'ry's happy dream
We wander back to home.

—Inter-Ocean.

A CRISIS OF FATE.

BY MIRIAM A. MERRICK.
(Continued from last issue.)

THROUGH the influence of his new-made friends, through the magic influences born of this accident, that was indeed a disguised blessing to the young artist, he was rapidly gaining an enviable reputation in this center of art. His pictures were sought after, and occupied the most favorable positions at the expositions of art so frequent and popular in that day.

Fame nor fortune could not satisfy the hunger awakened in the young artist's heart. In vain he sought to hush the sweet whisperings. In vain he sought to forget this hopeless passion in aspirations and toil; immortal it flourished, in spite of ill-winds and chill blasts, the flower of love.

These fancies held apart by doubts and delusions wandered, one evening, under the sweet dews of a tenderly falling twilight, and the night that came slowly down in all its starry splendor seemed pallid and dim to the light of love illumining each heart, that their mist-blinded vision could not behold.

Life to Harold Norwood had become a burden longer unbearable, and he bravely resolved to break this spell, to rend his heart apart from every faintly-cherished hope. To hear, to know his doom from the fair lips of the beautiful being at his side.

With those mournful eyes fixed with a pleading gaze upon that beautiful face of the divinity he so long, so madly had worshipped in silence, Harold poured forth wild words of his hopeless love: "Oh, fondly, wildly loved one, adored as never mortal heart adored, hear me patiently! Oh, thou canst not silence the voice of the heart all thine, enslaved by thy charms, chained by a hopeless love! Oh, do not drive me from thee, Hortense; let me linger near thee a slave, to render thee the humblest service if I may dwell in thy presence."

Hortense Burleigh was amazed by this strange, wild language. This mysterious confession from one for whom so long she had secretly guarded the love he had awakened in her heart.

What does this wild outpouring mean? Here is a mystery indeed.

Only a few days had passed since her friend Constance had confided to her the secret of this man's love for her, a love unreturned. He had thrown this jewel she craved, this love so valued, away upon one who did not crave or value it, whose heart was irresponsible to a pure and holy love.

As Hortense finally attempted to speak, Harold cried, "No, no! Be silent, I know too well what your heart holds for me. Your nobility would proffer me a grateful emotion and call it love. You would seek to wipe out a debt that burdens you with a counterfeit and think I will not, in my blindness, distinguish it from the pure coin. Oh, do not mock me thus!

"Until this morn a cruel shadow rested upon my young life. Through cruel persecution, I was made to bear the burden of disgrace arising from a crime of which I was innocent. The guilty one confessed his guilt upon his death-bed. I was exonerated, freed from the least taint of suspicion. Rejoicing in this vindication, I was coming to lay at your feet a pure life, an honorable name, the first pure love of my heart, when I was warned you had confessed your feeling of indebtedness to me, and would, if called upon, present your priceless love a willing sacrifice upon the altar of gratitude."

"Oh, Harold, here is some mistake. Some enigma demanding care. Do not judge rashly. Alas, my lips are sealed." The soft eyes were full of unshed tears, and Harold battled to keep down the mad impulse to clasp the beautiful being to his heart, as he said, "I cannot accept the sacrifice even of a grateful love. Because perchance I saved your precious life, is no reason I should accept the sacrifice of your heart. What would a heartless life be

better than death? No, no, take all and leave me a little self-respect."

Reader, I would the moment had come to give rest to these tempest-tossed hearts, when light should lift the shadows and the mists be lifted. But no; months of misconception and misunderstanding must need be prolonged, and their darkness and hopelessness intensified by a fiendish spirit that delights to sow seeds of discord, to plant and nourish thorns, to choke the bud-dings of faith and confidence that might, long ere this, blossomed into an abiding love.

By what mysterious paths the loving heart is oftentimes led to a haven of rest and bliss.

Judge Liechster prided in his descent from a long line of noble ancestry. His pride, his isolation, his rich appointments, his claims to a baronial family consequence, his aristocratic assumption of superiority, his capricious and dangerous temper, all set him apart and made him a popular marvel. His invective was tremendous; it scorched and consumed like a fiery rain. The judge ruled his household with a tyrannical sway; even his proud-spirited, independent ward, his adopted daughter, feared to provoke his displeasure, while his sensitive wife drooped and died in the uncongenial atmosphere. The judge was an Englishman, and Dame Rumor whispered, his heart still lingered across the sea; that his marriage in America was one of financial interests; that in a moment of passion, under some misunderstanding, the judge had deserted a wife and child and fled to America, and under an assumed name. A brother dying, had left his only daughter with her vast estate to his tender care. While there was much in his ward, Constance Liechster, to admire, with all her Juno-like beauty she made few friends. From childhood, the two motherless girls, Hortense Burleigh and Constance, had been intimate, yet two friends could not be more opposite in tastes, sentiments or disposition. Hortense, possessed of a trustful nature, entertained perfect confidence in Constance's loyalty and would have spurned with contempt the least intimation that her friend was not all that was pure, noble and sincere. Alas, that the trusting heart should ever be rudely awakened from its confidence so blissful, so pure! The judge had forbidden Constance ever inviting to his house this young artist, discovered accidentally, noticed and favored by Major Burleigh and his daughter through gratitude. Yet Constance, in chance meetings and secret visits to the young artist's studio, had adroitly sown seeds of distrust in his heart. Had impressed him with the false idea that, only through a high sense of honor and gratitude, Hortense Burleigh would ever sacrifice all future peace and happiness and lay her heart a willing sacrifice upon this altar, deeming it a just recompense for his brave services rendered in saving the life of her father and herself. While the fair destroyer whispered to her friend the false assurance that the young artist would be too honorable to reject this sacrifice, too well aware of the advantages, financial, social and otherwise, that could be secured to him by such an arrangement. Thus, through this false, heartless friend, two young lives were trembling upon the verge of destruction.

Will not some magic wand be stretched forth to save them from this fatal delusion and its disastrous consequences?

One evening, accompanied by the judge, Constance Liechster visited one of the famous art galleries of the great city. As they wandered through this Minervian temple, where the canvas was full of vitality and intense with expression, Constance, suddenly turning to address her father, found him standing before a portrait. Seeking to attract his attention, she discovered he was wholly oblivious to all about him. There he stood with folded arms, his pale, stern face forbidding interruption, his penetrating eyes fixed upon this portrait, the likeness of a handsome boy, perchance of some ten or twelve years of age. As she glanced at the picture, she was startled by a strange resemblance to some one, she could not then recall who. In vain she sought to attract her father's attention, to awaken him from this reverie. Finally, her patience exhausted, she timidly said, "Father—father, you are attracting observation by your attention to this one picture." The judge turned to her with an expression upon his stern, proud face she never saw before. It alarmed her; his entire frame trembled with suppressed emotion, yet presently, with his usual calmness, he addressed her saying:

"Who are the people on the opposite side of the gallery whose salutation you smilingly returned a moment since?"

"Surely, you know Hortense Burleigh, and her escort is the young Englishman who bravely snatched her from the embrace of death," answered Constance, with a sarcastic smile.

"This romance can have but one finale, I presume," remarked the judge, while Constance again secretly vowed, not if any secret interposition on her part could prevent it, should the imagined consummation of this dream of love ever be realized.

Harold and Hortense each observed the judge's long contemplation of this one picture. Hortense, having no idea of the character of the painting, or who the artist might be, ob-

served, "The judge is a connoisseur in art and I should like to see what it is that has so enamored him. Suppose we walk that way and satisfy my Eve-like curiosity?" Harold promptly acquiesced in her wish, and the two soon stood before the portrait. Hortense glanced at the picture, then quickly, questioning at Harold's face, saying in a suppressed tone, "How like your own face; indeed, you look like a matured representation of the same, of this handsome, boyish face."

"Thanks," smiled Harold, "behold how I grasp at the shadow of a compliment." Hortense imagining the likeness accidental, the two passed on; presently awakening from silent reflection, Harold said to his companion: "Shall I entrust you with a secret?"

"How charming," gayly returned Hortense, "to have one of your sex proffer so sacred a treasure to the keeping of a woman. Nevertheless (she resumed seriously), if you deem me worthy your confidence, I shall be true to the trust."

In a subdued, almost sad tone, Harold began: "That portrait, Hortense, is a copy of one of myself, painted in boyhood by an old English artist. It was for my fond mother, and before leaving my home, I made a rude copy of the picture, with the design in after years of surprising my mother with a copy as nearly like the original as I could make it. This is the copy; it was placed here by accident—by mistake—some strange influence seemed to urge me to allow it to remain through the exposition. To-day I had tidings from home of a peculiar nature. A letter from my mother informing me that he whom she committed the mistake of marrying when I was a child—my step-father, who despised me, terrified me in boyhood, and later persecuted me until he drove me from my home, from my mother—had met with a sudden death. I cannot mourn this man's death. My noble, patient mother was a martyr while he lived, suffering silently all these years and I helpless to rescue her. I have no remembrance of my own father; my mother has always maintained a strange silence concerning him. Now I must hasten to my mother or she must come to me. I wish I could persuade her to leave that home, so shadowed with past suffering, and come here among new scenes."

"How I should love to meet and know this mother of whom you are so proud, upon whom you lavish so much love. Yes, yes, bring her here and we will help you make her a pleasant home."

How Harold blessed the noble girl for this beautiful sympathy and interest in his life.

A few months passed by, and the English mother came across the sea to spend the remaining days of her strangely checkered life with her son. A pleasant little home was secured, and soon, content and happy, the mother and son were made to feel very welcome in their adopted land.

One day, soon after his mother's arrival, Harold had a visit from Major Burleigh, at his studio.

"I have come," said the major, "on a secret mission. Judge Liechster having seen at the gallery the portrait of a boy, that has taken his fancy, and having discovered the picture to be one of your productions, and not having the pleasure of your acquaintance, has employed me to make you a handsome offer for a picture he says he must possess."

"I regret to disappoint the judge, but the picture is not in the market; it belongs to my mother," replied Harold.

"Well," said the major, "I have come well prepared, you will observe, to secure my object. I have another proposition from the judge. He will give you your own price for an exact copy of the picture."

"Have you any idea, sir, why the judge is so anxious to secure this portrait?" inquired the artist.

"In vain I attempted to discover his object in coveting this particular portrait; the only satisfaction I received from the judge was, it recalled to him a handsome boy he had once known and admired. And he regarded the work skillful and remarkable in several particulars."

"Upon reflection," said the artist, "you may say to the judge, he may have the copy, as I have at present the original painting."

Long after the major departed Harold was in vain seeking to fathom this mystery.

The portrait of the handsome boy was placed upon the wall of Judge Liechster's library. He would have it there only, and again and again his daughter found him standing gazing silently, intently, upon that boyish face, yet never a word escaped his lips explaining his remarkable infatuation for this portrait.

One evening, as mother and son were seated together in their cozy home, Harold related the incident of the judge's purchase of this copy of his own likeness.

The mother appeared intensely interested, and finally inquired, "Who is this Judge Liechster, my son?"

"Indeed, I have little knowledge of the gentleman aside from hearsay. I have heard many strange rumors of his earlier life, and, indeed, it has been hinted he is living under an assumed name. He mingles little with the world. Is a proud, stern-looking, handsome man," returned Harold, without lifting his

eyes from a book in his hand to the sweet face of his mother, that betrayed mingled emotion.

The mists of delusion that had so long silenced the voice of his heart, so long forbidden his life to put on its legitimate brightness and beauty, still lingered.

The young artist prospered in everything but the interests of his heart.

Hope long deferred was wearing upon him, and yet he could not humble himself to accept gratitude for love, and he loved Hortense Burleigh too passionately to accept the sacrifice a sense of human duty inclined her perchance to make. And all these days Constance Liechster was doing all within her power to estrange these hearts. Some strange influence seemed to drive her with irresistible force to this great evil. What recompense would it bring to her to thus defraud two loving hearts—to defraud Hortense, her loving, trustful friend, of her rightful inheritance? Something whispered to her heart, she could never win the love of Harold, and if she could, she would never be permitted to accept it. Thank heaven, ere it was too late, the evil angel left her side. Right and mercy triumphed, and Constance hastened, if possible, to atone for her sin by clearing away the delusion she had encouraged.

The first opportunity that was presented, she made another stolen visit to the artist's studio, this time as an angel of mercy and light. Harold could not but notice the agitation of the really coldly calm girl, as she hastily said:

"Could you spare me a few moments, Mr. Norwood, and pardon what may appear an unwarranted intrusion?"

"Certainly," replied Harold, asking her to be seated, he continued: "To what in the world am I indebted for this honor, for your presence in this uninviting nook, so lovely a day?"

Was it a mist in the bright eye of the regal beauty, as with emotion she promptly said:

"Mr. Norwood, I believe I have sinfully assisted in keeping up a delusion in separating two loving hearts that might, in the light of truth, be supremely blessed. I penitently confess I have sinned against you, against my life-long, cherished friend, against the purest dictates of my heart. I crave your pardon. Can I do more? Think not it has cost me no effort to make this humble confession. I am a proud, selfish creature, all unworthy your esteem or the love and confidence of my life-long friend." Overcome with emotion, the proud head of Constance Liechster was bowed in silence.

Reader, you or I may never know the exact nature of this secret confession, made with true penitence to the young artist in this interview. One thing we do know; when Constance Liechster departed from that studio, she was a nobler, grander woman than when she entered therein. She had bravely fought a battle and won a glorious victory. Verily, Harold Norwood might surely have lost his heart as he looked upon the royal girl and thought of the marvelous revelation she had made, had not that sensitive organ already strayed beyond his keeping.

The evening following the strange interview with Constance Liechster, Harold was early announced at Major Burleigh's beautiful house. Hortense, extending her hand in a cordial welcome as he entered the library, where she sat reading to her father, exclaimed:

"Harold—brother, friend—verily, some good fairy must have waved her wand, commanding good gifts to you. I never saw your eyes so nearly bright, your face so hopeful as now. Come, sit down and tell us of fortune's smiles; you have not in all the world friends so ready to share your joys or rejoice in your prosperity."

A flush of confession overspread the artist's face, as he smilingly said: "Be patient and I'll tell you a story, presently."

The happy thought dawned upon the major, that he would excuse the youthful pair. "The lovely moonlight's too inviting," remarked the wise man, "for you two young sentimentalists to linger within. So away with you, I'll excuse you."

Thankful for the major's dismissal, the happy pair were soon wandering amid the beautiful grounds surrounding this charming home.

The air was fragrant with the breath of myriad flowers, while soft breezes murmured sweet melodies through the ample foliage. Reader, with finite language why destroy or mar the magic beauty of the old, old story, ever new, by seeking to repeat it as it fell in thrilling words from the long-closed lips to-night? The story so long, so cruelly imprisoned in Harold Norwood's heart, beating like a wild bird against the bars of its prison-house, how eloquently the sweet story was repeated.

"Tell me, oh, tell me!" cried the impatient lover, "Hortense, my matchless love, that your love is not given as a reward, but a free gift. That it's the same love wherewith I love you. No, no—not as I love you; this can never be."

The sweet, pure face turned upward, upon which the soft moonlight fell so caressingly, told the secret love of Hortense Burleigh's heart. A love that naught could purchase, free and pure as the mountain rill flowing from an unsullied fountain. At last, when the first wild ecstasy was somewhat calmed, the lover said:

"Come with me, Hortense, to my mother. Come, let me take to her the rarest gift a son could bestow. She never was blest with a daughter's love."

Humoring her lover's impulse, Hortense accompanied him to the quiet home. To the poor girl who had never known a mother's tenderness and love it was a charming picture that met her vision, as she entered the artist's home. There in a great, easy-chair sat the queenly, English mother, the silvered hair wreathed about her noble brow. The soft eyes full of love, a sweet, patient face, a woman of proud bearing. Harold, boyish in his new-found happiness, taking the hand of Hortense, led her to his mother, saying: "I have brought you a precious gift, mother mine, to-night; a peerless gift, a blessing that shall make radiant life's even-tide with her glorious presence. Hortense, love, this is our mother. You shall no longer be motherless nor I fatherless. Since our first chance meeting the major has extended to me a father's kindly interest and counsel. It only awaits me to be accepted in the relationship I crave."

After a season of delightful intercourse with

the mother, the children hied away to tell the sweet secret to the major, who exclaimed as soon as he heard the revelation:

"This verily the consummation devoutly wished, my children."

The reader will pardon us for departing from the stereotyped mode in this wooing and winning; innovations and departures are sometimes refreshing.

With the mists all cleared away, reveling in the noon-day sunlight of confidence and assurance sweet, Harold painted as never before. An emanation fresh from his easel was even now creating great excitement in the circle of art. He worked with new inspiration and vigor. While busily engaged one day upon a scene, partly historical, partly imaginary, he was surprised by the entrance of Judge Liechesteer, who asked the artist if he would spend a certain hour on a certain evening at his home. "I have asked this favor, hoping by the interview to destroy or establish as facts certain fancies that have haunted me for some time."

Harold assured the judge it would be his pleasure to call at his home on the evening specified. And with a few common-place remarks, the judge took his departure.

"What new mystery awaits me?" thought Harold as he resumed his work. His life was a charmed existence now. The unhappy past—its shadows were driven away by the radiant sunlight of love and hope that flooded his present. His mother, whom he had induced to leave her old home with fear and trembling, appeared contented and happy amid new scenes and associations. His cup of life overflowed with blessings so rich and bounteous.

The evening appointed for the visit to Judge Liechesteer's found our young hero promptly on his way to fulfill the engagement. Arriving at the palatial mansion, he was ushered into the library, where the judge awaited him. With a cold, stern expression upon his face he offered his hand, and in greeting, with an air of restraint or as if seeking to mask some secret emotion, he said: "Please be seated, sir, I'll not detain you long. I know how valuable your time is." Gazing intently into Harold's face, then into the face of the portrait upon the wall, he finally continued dreamily: "A strange fancy has haunted me and I could conceive no better way of dismissing an idle fancy or proving it a reality than by asking the favor of a visit from you. I am tormented with the idea that a striking resemblance exists between your face and that boyish face of the portrait before us (pointing to the picture on the wall opposite), and now I am given the opportunity of comparing the two, I am more profoundly impressed with the mysterious likeness. I had secret reasons for desiring and purchasing the portrait of that handsome boy. It would be a great gratification if you could give me any reason for this strange resemblance. Surely, it's not fancy, you must agree with me, and believe me, sir, it's no idle curiosity that inspires me to make this inquiry."

Harold hesitated, while a bright smile illumined his handsome face, making its resemblance to the face in the picture more forcible. Finally he said:

"I think, judge, I can furnish you a key to unlock your mystery. I am but a matured, not improved, edition of the boy in the portrait. It's a copy of one painted in my boyhood by an old English artist, now treasured by my mother."

At this revelation of the young artist, the judge, the strong, proud man, was like "a reed shaken by the wind." Pale with suppressed emotion, he excitedly paced up and down the library, pausing occasionally before the picture, and glancing from it to the face of his guest—a face now full of amazement and inquiry. At last, controlling his agitation in a degree, he paused before Harold, saying: "My young friend, I am profoundly interested in you. What time may reveal, I dare not, have not courage to know, but remember, if ever you need a friend, approach me as you would a father."

The judge's manner and tone in saying this was subdued; indeed, almost sad. Harold thanking him, arose to depart. The judge grasped his hand fervently and accompanied him to the door, where he said, "Good-night, good-night," reluctantly, as Harold walked forth into the silence of a late hour.

What mingled emotions crowded his heart as he hurried home to his waiting mother. "What new mystery is this, come to my eventful life?" he secretly thought. Arriving home, he found his mother patiently, anxiously waiting him, wondering at his delay.

"Pardon me, mother mine," said Harold, as he pressed a kiss upon the pale brow of the devoted mother; he tenderly continued, "I know you must be weary. Shall I escort you to your room?" A loving service he was wont to perform each night since this happy reunion.

"No, my son," said the mother, "I am not weary, or could not sleep should I retire. I know not what has come over me to-night. I have been reliving a portion of my life, the memory of which I would have buried. There's a secret page in my life-history that has never been opened even to you, my trusted son—my support and comfort. I feel strongly constrained to reveal this secret portion of my past to you to-night. In vain have I sought to thrust the impression, the desire to do so, aside. I feel the revelation must be made to you to-night. Will you humor your mother with a patient hearing?"

"Indeed, anything pertaining to your life will be of profoundest interest to your only child; you need no assurance of this."

"I'll be as brief as possible, but there are certain reasons why I think it best you should know these things at present. That I should not die with the secret locked away in my heart. Fortune smiled upon me from my birth. I was in childhood rocked on waves of love 'neath summer skies. In early life young love came in gentle guise, stealing like a dove to my bosom, its resting place. I warmed it in my heart. Alas, my son, so soon to awaken and find the dove had flown and in its stead nestled a vulture; that thorns were hidden among the leaves of life's roses that pierced my heart. Deceived and deserted, in a joyless, cheerless, loveless age I stand alone."

"No, no, my mother, never loveless and alone while your son is by your side. Think not because another shares my heart, there's no room for you; there you will always dwell a royal guest."

"Do not misunderstand me, Harold. I have no fear of desertion from you. Hear my story and you will understand. The sun never shone upon a happier bride than I, when your father chose me for his wife. Until after your birth no cloud ever stole over our sky of love. Then vile suspicions were sown in my heart, through the wicked influence of the man who afterward became my second husband. Suspicions that became destructively real to me, and my heart was chilled, was turned to stone, love's pure, perfect trust broken. Your father, who possessed stern and lofty pride, a scorn of all things low and mean, was driven from

me by this vile deception, and I was made to feel he had been false to me, deserted me; aye, more. At last the tidings came of his death, and in that solemn hour that he breathed forth curses against my name. Then came this viper in the guise of an angel of light—of sympathy. Came with balm for my wounded heart, came with falsehood on his lips. Delusive and persistent, he in time won my hand, but never my heart, that was dead—buried."

Overcome with emotion, the mother paused, while Harold, taking her hand caressingly in his, breathed words of loving sympathy into her ear.

Again resumed Lady Randolph: "I had not been Herbert Randolph's wife a year until he showed his cloven foot, until all masks, all disguises were cast aside, and he became my tormentor, despising and persecuting you, my only child, until he drove you from the home of your birth. The only forgiveness I could ever feel for him, my son, was when in dying he confessed his guilt. Confessed how he had deceived me, had poisoned your father's heart against me, and driven him in desperation to a foreign shore, and finally, with his last breath, confessed your father was still living. That the story of his death was naught but a cruel deception, an artifice conceived to delude me into a union with him, that he might mete out to me the just punishment I merited for my rejection of his heart and hand when I became your father's wife."

Harold's face flushed with passion, his heart beat wildly with resentment, with *revenge*, as his mother continued:

"And, oh, my son, Herbert Randolph's last word was, *forgive*."

Unable longer to suppress his emotions, Harold sprang to his feet, crying, "*Curse him! Curse him!*" This tyrant who darkened my childhood dreams in nights of fear. Who chilled the bounding pulse of joy since first my infant lips essayed to lisp the hallowed name of mother. *Curse him* who tore from your clasped life's most precious, cherished treasure—the deep, tender, first-born love of a noble heart. Forgiveness for such a wretch? Could heaven be just, yet merciful, to such a man?"

"Vengeance is mine, I will repay, saith the Lord," my son," calmly responded the injured wife—the fond mother. "Most Merciful, break not the bruised reed. By all the tears shed for mortal woe, let the silent suffering of these loving hearts come up before thee at this midnight hour. Stay thou the bleeding of this wounded heart, and, oh, if it be thy righteous will, restore thou the lost treasure."

As Harold silently looked upon his mother, whose steps tread painfully this "wine-press of mortal grief," his soul once brave and exultant, so strong and high resolve, grew faint, but with the passing of the night, with the dawn of a new-born day came the sweet assurance to his soul: "He liveth yet who looked on woman's grief and wept. He who took the Jewish maiden's hand and with one word gave back to mortal life a spirit wandering in deathless realm, still reigus, the master of life, the God of love."

After a few hours sleep, the mother and son met at a late breakfast, the next morning. The mother experiencing a feeling of real relief and rest for having unburdened her heart to her son; the son feeling a more tender solace, more loving and profound sympathy, a higher admiration, if possible, for his heroic, suffering mother. With the light of dawn and calm reflection came the thought: "The man who committed this great wrong, the author of my mother's misery, is beyond the reach of human vengeance. Gone to his reward." And this awakened in his heart a living aspiration to bind up the bruised heart of his mother, and his soul grew exultant with the hope that somewhere he should find his father; should roll the burden from off his suffering spirit, restore his faith, and reunite in all the trust of early love these hearts so dear to him—so long estranged—his unselfish heart forgetting almost his own new-found bliss in the happiness and peace he hoped, ere long, to restore to these long-troubled hearts so dear to him. Suddenly, like a cold shadow there fell upon him the thought, "What effect will the knowledge of this mysterious story of my mother's life have upon Hortense Burleigh's heart? Will she feel our family escutcheon has been stained with a disgrace, and she cares not to unite her destiny with a race so shadowed?" Harold shuddered at the very thought, and yet his noble soul portrayed to him unmistakably his only duty. With his mother's permission, he would hasten to breathe the dark revelation in her ear; let the consequences be what they might, he would try to meet it bravely. The eloquent voice of his heart whispered hope as one evening, later, he started upon this doubtful mission. The lovers had no sooner met than Hortense said tenderly: "Harold, I fear your ambition is alluring you to overwork. You have a pale, wearied look to-night."

Smilingly Harold replied: "Fancy, my dear, mere fancy."

"No, verily, I'm not overburdened with fancy, sir. I'm a very plain, matter-of-fact woman, you will observe."

"As you please, so you please to love me as you find me," returned the lover playfully.

The youthful reader, at least, may better imagine than we can the conversation that followed between this youthful pair, around whose lives love was flinging his magic spells. "With hope's golden sunshine around them, on joy's couch of roses half-blown, there could scarce be but one theme." But the voice of duty, cold and cheerless, sounded in Harold's soul; he must obey even should this new-born love take alarm, and spreading its young pinions, depart. At length, Harold, arming himself with courage, introduced the distasteful story that burdened his heart, by saying:

"Hortense, I have a strange revelation to make that may sever the mystic union that twines our hearts."

Hortense was inclined to think lightly of these words until she raised her eyes to her lover's face, and there saw the pained, sad expression that clouded his handsome features.

Then sudden fear fell upon her heart, as she inquired: "What can it be? Has some misfortune come to you, Harold? Speak quickly."

"I will speak quickly, and dwell as briefly as possible upon the sad, cruel story," responded Harold, as he proceeded in impassioned words to relate the story of his mother's wrongs.

Hortense heard him patiently; now and then an exclamation of surprise or disgust or sorrow escaped her lips. Harold could not fail to observe with satisfaction, aye, with delight, that her sympathies were all with his mother—with him. "She placed her earthly being in his keeping."

When he was anguished could she be at rest? Will she not feel the tears that he is weeping, like swift rain, falling on her breast? Amid the pauses in his revelation, Harold could hear the gentle sigh. When the young lover ceased speaking, Hortense came and sat on a

low seat at his side; her eyes looked up through tears like flowers through dews of evening; there was a painfulness in her lips that vanished with the fond lover's kiss.

Harold Norwood's mournful eyes grew luminous with joy, as he whispered to that loving heart: "In your great love, your faithful, unflinching love, my own, my beautiful, I have found the strength, the repose and the fullness of life."

Reader, why tarry, why keep you in suspense. Again one evening Harold Norwood was seated in the library of Judge Liechesteer's home. His picture painted in boyhood still occupied its olden place upon the wall. The judge entering, extended to Harold a most cordial welcome, and seated himself near him and before the portrait.

Almost abruptly the judge spoke, saying:

"Again I have asked you to favor me with a visit. For months I have been battling for courage to intrust to you a secret of my life. A secret that will bring you gold and influence, joy or sorrow; a secret you will receive with delight and gratitude or scorn and contempt; a secret that will bring to my own unhappy life a ray of light, a gleam of joy, or plunge me into hopelessness and sorrow unparalleled." The judge's face paled and flushed in turn while he was speaking. The strongest emotions seemed struggling to escape. Harold, looking upon him with undisguised amazement when he ceased speaking, said:

"Sir, your words are enigmatical to me. I do not comprehend you, do not imagine what this secret may be that holds so much in its hiding."

"Hear me again. Once I loved as you love now. Once all of bliss the earth born can inherit was mine. The world looked on and made its comments when I wooed, won and married one of the loveliest, most beautiful of the English hamlet, my boyhood home. The world said it was a fair exchange—beauty and purity for a noble name and fortune. The royal robe of white satin and priceless lace fell in sweeping folds about a matchless form, while the wedding veil half hid the face of my peerless bride. The chief characteristic of the exquisite face was pride; there was a sweetness, a grand serenity about it, but pride was dominant. Then, in blissful ignorance, I thought this pride was force of character, great strength of resolution, and when those solemn words were pronounced, 'Those whom God hath joined together, let no man put asunder,' this fair bride smiled and buried her face in the pure white flowers she held in her hand—emblems of purity—her soul more pure by far, methought, than the blossoms in her hand. I carried away my bride to dwell in the home of my childhood, on the dear old estate, a very Eden of transcendent beauty. Alas, like the Eden of old, into this entered a serpent clothed as an angel of light. He deceived, allured and stole from me my peerless Eve. Tempted, rather, she fell an easy prey to the masked impostor, and with breaking heart, ruined life, I fled from the guilty pair. Ere this cruel discovery—this sad parting—a beautiful boy was given to us. I left this treasure with his erring mother, nevermore to feast my eyes upon his handsome face, the face of his abandoned mother. When first by accident my eyes rested upon your painting, you assure me is a copy of a portrait of yourself, the wild fancy that it was the picture of my boy seized me. This impression haunted me until I could no longer live in doubt. There remains little more of life for me at best. As the evening comes stealing upon me, a wild yearning to look upon the face of my long-lost, only son comes over me. There's a strange resemblance between the face of my erring, lost wife and yours, and as I have often said, my boy resembled his mother, these facts may have tempted me to hope; I have vainly sought to drive it from my mind. And now will you grant me one final favor, will you have your right arm for a moment? One day, playfully I said to my wife: 'I'll mark our boy with our family escutcheon, so if he should ever be stolen, we may recover him,' and I printed on his baby-white arm the coat of arms. Like the blood on Lady Macbeth's hand, no cleansing or time could efface it. Again and again it seemed to disappear, but by the touch of a certain chemical I possessed, it was brought forth plain and clear again."

Harold promptly responded to the judge's wish. The strong man turned pale; his hand trembled like an aspen leaf as he sought the mark long since playfully imprinted by the hand of love. What vast interest hung upon this solemn moment. In vain the eager eyes scanned the arm; hope began to fade from the judge's face and despair clutch at his heart with its icy fingers. At last, with a moan, he turned to a table near by, and grasping a small vial therefrom, poured its contents upon a sponge, and raising his eyes heavenward with an imploring look, he touched the outstretched arm gently, once, twice. Like magic the mark came forth bold and plain. A cry of joy escaped the father's lips. Tears of joy flowed from his eyes and the long-lost father and long-lost son were elated in each other's arms.

Think not, my reader, it was a long or tedious task for the son to establish the purity, love and loyalty of the mother and wife to the estranged husband and father. In a very brief season the carriage was ordered, and father and son seated side by side, were rapidly driven to the young artist's humble home. It had been arranged that Harold should enter first and gently prepare the unsuspecting mother for the marvelous developments, the remarkable discovery. But, alas, when the door was reached, through a window the judge caught a glimpse of the patient face of the long-suffering one, all plans were upset as he leaped from the carriage, and rushing frantically past his son and falling prostrate before his injured wife, with penitence and tears implored pardon and restoration.

Women's hearts are the same in all climes, in all ages, and Lady Randolph's all-pitying woman's heart was no exception.

Truth at last had pierced the cloud with golden ray, and love's own sunshine bathed these long-sundered hearts in its smile.

There is little more of our story to tell. The strangest double marriage that was ever solemnized in Washington City or any other, perchance methinks, was when his restored parents were reunited, and Harold Norwood took Hortense Burleigh to be his wife, to honor, love and cherish.

Reader, do not waste your sympathy upon Major Burleigh and Constance Liechesteer, who seem to be left so alone and homeless by this wholesale union. The major never would grow old in heart, and was remarkably youthful in appearance, when Constance Liechesteer declared she would rather be an old man's darling than nobody's, and one bright morn when the sun shone lustrous and clear with a golden warmth that foretold the coming of June, the major and Constance were quietly driven to the church, and returned to proclaim a new union.



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Our Household.

THE LITTLE MIDDLE GIRL.

SOME one says nice dressing adds to one's vanity and self-consciousness. I beg leave to differ. To always be well and becomingly dressed puts one entirely at ease. A woman accustomed to being well dressed never has that air about her that she is "dressed up," as the woman who only wears her best clothes occasionally.

Every one is conscious of the charm there is about something new, and I have the sincerest pity for the little girl who must always appear in a made-over garment belonging to some one else.

It is usually the middle daughter. By the time she is through with it, it is too much worn to be still fixed for a younger one. So the eldest and the youngest generally get new clothes.

People generally think children have no rights, no voice in anything concerning their own clothes. I know one little girl who was so sensitive upon the subject of colors that it was positive agony to be compelled to wear "swearing colors," as one has called them. She was born with an artistic adaptation of color, and her mother had none, and often the little thing was compelled to appear in clothes so incongruous that the child, in her embarrassment, acquired the reputation of being an awkward, shy, uninteresting child. A year away from home developed her so that she was scarcely recognizable in her ease and repose of manner and her ability to entertain. She laid it all to suitable dress.

It is positive cruelty to send a little child among its fellows with an odd color of clothing or a conspicuous material, or patches entirely different from the garment, and subject them to the taunts and ridicule of their mates.

I was amused at an instance that happened at a friend's. The father tried to compel his fifteen-year-old son to go to high-school with a pair of patched trousers. The boy rebelled, and he was taken out to the barn to be dealt with. His mother listened for the blows with her heart in her mouth; but no sounds came—only from voices. Finally, the boy passed up to his room, came down with his better trousers on and went to school. The father explained that the boy had the best of the argument, so he let him go.

"I told him I had worn such clothes in my boyhood and I didn't see why he shouldn't."

"I'll tell you why, father. You were a poor man's son and I am a rich man's, and I do not think it is right for me to be taunted with my father's stinginess when I know what a whole-souled, generous man you are."

"A pair of pants is a small thing, Janet, compared to my reputation, so we compromised."

While patches and well-mended clothes are no disgrace at all, it sometimes requires a great deal of pluck to wear them, even when no better can be afforded, but people in good or affluent circumstances have no right to subject their children to ridicule. There is no reason, either, in the children doing all the economizing in the family. The father doesn't feel called upon to give up any of his luxuries. One lady told me her husband spent enough for cigars to dress her two daughters comfortably and elegantly that if she could have his cigar money, she could do that and save money. Is that right? Could one blame the girls for rebelling at the made-over clothing they were obliged to wear? So, have pity on the little middle girl.

LOUISE LONG CHRISTIE.

HOME TOPICS.

SPRING BREAKFASTS.—At this season of the year the appetite is apt to be capricious, and instead of the hot cakes, steak, chops, etc., that have been relished during the winter, fruit, eggs, toast, etc., are more tempting. Apples are about gone, and those that are left have lost their flavor and lack the acidity which is so appetizing. I baked a pan of these a few days ago, preparing them as usual, but in addition

to the sugar, butter and cinnamon that I usually put in after taking the core out, I put into each apple one half of a teaspoonful of lemon juice. They were delicious. Good dried apples are not to be despised, if they were nice, sour apples before they were dried, and then are cooked in the best way. Wash them well and put to soak over night. In the morning, put them on the back part of the range, adding more water if necessary. Put on the cover and let them cook slowly, without stirring, until tender, then add sugar enough to sweeten to taste, pour into a jar and put in a cool place. I keep mine on the back porch, and have no trouble to get them eaten.

Oranges are nice for breakfast, and so are pomelos, or shaddocks, as they are sometimes called. Many do not like the latter on first tasting, but after eating them two or three times they usually prefer them to almost any other tropical fruit. To eat them, cut in halves, and with a teaspoon take out the juice and pulp, being careful to not take any of the rind, or part that divides the segments, into the mouth, as that is very bitter. If a plentiful supply of fruit is eaten at this season, there will be no need for the "tonics" and "bitters" that so many deem necessary.

There is no doubt that the Lenten abstinence from meat is good for the body, however we may look upon it as a religious observance.

A dish of crisp, coral radishes, of fresh lettuce or watercress on a spring breakfast-table is pleasing to the eye and tempting

neglect. After the decaying vegetables, etc., are removed, not only the walls but every bin, barrel or box left in the cellar should be whitewashed. If the floor is brick or cement, it can be washed; otherwise, have it scraped and swept, and then well sprinkled with fresh lime.

Instead of beginning with the closets and the attic to clean house, begin with the cellar, for there is where the danger lurks that the first warm, spring days may bring to light in the form of diphtheria or typhoid fever. In the country, God, in his goodness, has provided us with an abundance of pure air and sunshine, but it is left to us to decide whether it shall remain pure or be loaded with poisonous gases from decaying vegetables, foul drains and cesspools, stables and pigpens. Even the chips, if allowed to accumulate year after year near the door, will decay and exhale disease-breeding gases. Better keep the yard well cleaned up, and put the chips in a pile, somewhere, to rot; then they are valuable to put around currant bushes.

MAIDA McL.

AN ABUSED WORD.

"I hate the very sound of the word," exclaimed a lively girl when her mother said "economy."

One does learn to hate even a good word, if it is too much ding-donged in one's ears, and when one wishes a new dress or a short trip, and is denied on the plea of economy, a prejudice is raised against the oft used and sometimes abused word.

Economy is really an art, and every art has for its aim pleasure.

DON'T WAN'ER GO TO S'EEP.

At night, when sleep has hovered 'round the little, snowy bed,
And borne away on snowy wings the little golden head,
Above the clouds and far away to that funny land of dreams—
A merry land of fancy to infant minds, it seems—
A mother sits and watches, while her heart is filled with joy,
As she gazes on the features of her little, sleeping boy.
Then oft from under covers a chubby hand will creep,
And a tiny voice say: "Muzzer, I don't wan'er go to s'leep."

A mother's lullaby is heard; then sleep with noiseless wings
Steals little one away once more, while watchful mother sings.
Then comes a blissful silence; the mother does not speak,
Though that tear is speaking for her as it glistens on her cheek.
She takes the sleeping baby and folds him to her breast—
A mother's arms, so gentle, will not rob him of his rest—
And a prayer is sent up yonder, that God will truthful keep
The lips that murmured, "Muzzer, I don't wan'er go to s'leep."

—S. H. Gray.

to the appetite. As the vigor of the whole day often depends upon the breakfast, it pays to have the best and most appetizing food at that time.

CELLARS.—If I were building a house now, I would have no cellar under it, but, for both convenience and health, have it built above-ground, adjoining the kitchen. If the cellar under the house is used for storing fruits and vegetables, in the darkness and warmth maintained during the winter the process of germination and decay goes on, and the poisonous gases exhaled are constantly escaping into the living-rooms above. Potatoes, turnips, onions, etc., have commenced to decay when they begin to sprout.

Those who have used cellars built above-ground say there is no trouble in making them frost proof, and that for warmth in winter and coolness in summer they equal, and in cleanliness and comfort surpass, the cellar under the house. If there is much fruit and vegetables to be stored, a cellar under the barn is convenient. If the cellar is under the house, the only safe way is to ventilate it as well as possible, remove all decaying vegetables as soon as discovered, and be sure to have it thoroughly cleaned early in the spring. I don't believe it is a woman's work to clean the cellar, but she can gently remind the men folks of the necessity of early and prompt attention to this duty. If it is put off too long, the crowding of outdoor work will take all their time, and perhaps sickness will remind you of the

Both mentally and morally it is an advantage to study the application of words in their finest discrimination of meaning. Many well-meaning persons, by their stupid misuse of words, do as much harm as though they were mischief-loving liars. Every one has among his acquaintance some person who, in repeating the least anecdote or bit of news, so distorts and discolors the truth that the report bears no resemblance to the original circumstance.

I shall never forget one day when one of my relatives turned to me and said concerning her sister (who was present), "Kate, I don't wish you ever to pay any attention to anything Lizzie says."

Lizzie and I looked at each other in amazement, and then Lizzie tried to laugh, though it was evident she felt aggrieved.

The accusing sister proceeded: "To give you an instance: I heard Lizzie say that when cousin Mary was dying she turned to her father and said, 'Good-by, you have always been kind to me, father.' But that was not what she said; it was, 'You have been a kind father to me.'"

"Well, now, what's the difference?" asked Lizzie, proving by her very question that she did not make nice distinctions in the use of words.

One need not be as quibbling as a lawyer cruelly cross-examining a witness, but it is a great advantage to be able to say exactly what one means, and it is a great satisfaction to feel one is listening to the truth precisely expressed.

To be economical does not mean always to do without things. The word economy is made from two or three Greek words which mean to manage a house. It has come to be applied to many various things which require wise regulation, so we hear the phrases "political economy," and even the "economy of a poem."

To say that a person is "stingy" when he simply manages his affairs with caution, is hardly fair. He should be regarded as a "manager" or "economist." Either epithet is a compliment. When the lively, young woman said she "hated the sound of the word economy," she must have been used to regard it in a perverted sense. It is a misfortune to be obliged to exercise frugality to the point of "chill penury," but economy is necessary for the rich as well as the poor.

Neither does this word apply alone to money. I know a lady who is a marvel at producing house-furnishing effects at very slight cost. She tells of transforming her dining-room for the sum of three dollars. The old carpet was badly worn, so parts of it were discarded and the rest made into a "square." This left a margin of bare floor, which she stained a certain color, after which, for the sake of "harmony," she painted the woodwork. An over-mantel was put together by a carpenter and stained to match the floor, etc. A little varnish, a touch here and there of different kinds of skill, and the dining-room was truly an attractive room.

"I did it all myself, and it cost only three dollars," she would boast. But there was one thing she left out of the account, and that was—backache.

When a superfluity of elegance must be purchased at the expense of health, a wise economist will be content to be simple and plain.

What is the greatest blessing in the world? A light heart, I should say, and a light heart is not so frequently the result of a blameless conscience as it is of a sound body.

Mr. Howells says woman thinks it extravagant to spend money for anything but dress, implying that women's ideas of domestic economy were confined to clothes.

When Mr. Howells speaks of women, he is sure to be humorous and sententious, but not always just. We recognize, however, the foible at which he aims in this remark. To love of dress women sacrifice too much time and labor. They forget the story which Bert Harte has versified. There was once a king sick of a grievous disease. The physicians finally told him that he could only be cured by wearing the shirt of a happy man. Then began the search for a happy man; it was long-continued, and when, at last, he was found, he was a jolly beggar, who had no shirt!

We fret sometimes, thinking we want fine horses and fine clothes, but we don't. We want contentment, and that is soonest found by a wise management of our resources. Is she a good economist who spends temper and time, good spirits and leisure, to secure such less valuable things as furniture and clothes?

We must study true values.

A good domestic economist does not go down cellar or upstairs unnecessarily, and when she must go she uses a moderate pace. The muscles of the heart wear out if used roughly, and life is too precious a thing to be frittered away. This is especially true of mothers' lives.

A good domestic economist does not spend time ironing tucks and ruffles, when she might be resting or refreshing herself with a cheerful, instructive book. A good domestic economist does not rouse the ill-feelings of her family by speaking in a cross voice, or provoke insubordination by a domineering manner.

It is poor economy to read a trashy book when one can read good books.

It is poor economy to indulge in idle and unprofitable conversation, but genuine pure fun is a good investment. The man who once a year takes the entire family to a first-class circus is not unwise.

It is poor economy to let pass all the chances for excursions which every summer are advertised. A trip to Niagara Falls is better than to save the money, or spend it in clothes or carpets.

There are many times when good management (economy) prompts one to forego the least pleasure and all unnecessary spending. It is when one is buying a home, or clearing from it a mortgage; when one chooses to study music, or go a few years to college. In all these cases economy is a cheerful bargain with one's self to give up some things in order to gain others which seem more valuable.

The opposite of economy is weariness, embarrassment, disgrace. It means bad temper, old clothes, no postage stamps, debt.

Economy is an art, and all art has for its aim pleasure. The aim of economy is the pleasure of finding one's expenses—physical, financial—always less than one's resources.

KATE KAUFFMAN.

THAT SWILL-PAIL.

Where there is one farm-house furnished with sink and sewer to carry off the slops, etc., from the kitchen, there are a hundred without them. And, as most farmers utilize the slop, parings, etc., for their hogs, it becomes necessary to save it in a manner to make it portable. Then there's no other way out of a dilemma than to have a "swill-pail," or several of them.

These pails most kitchen workers prefer shall be outdoors—just outside the door, you usually see them, and just the place to make or cause extra steps for the housewife. What is the use of having it outside at all? Why not set it in the pantry, or, if need be, in the kitchen, until the work is done, then have it emptied? Some women will not do this because they fear they might splash the floor, which is easily avoided if one is careful. Have a square of oilcloth to put under the bucket when in use.

The swill-pail should be kept well painted, dark red or brown being the best colors. It should be thoroughly scrubbed and scalded, at least once a week—wash-day is a good time to attend to this work. A confectionery or candy bucket, or a tobacco-bucket, make good swill-pails as long as they last; but they do not last long.

Always have a cover for the pail. Candy and tobacco buckets have very nice covers, which your groceryman will give you, or sell to you very cheaply.

ELZA RENAN.

FANCY EDGE WITH DIAMOND INSERTION.

Abbreviations—c, crochet; s c, single crochet; d c, double crochet; sh, shell; st, stitch; ch, chain; tr, treble.

Miss as many st in first row as ch. The d c are to be worked in following rows under the ch 3 or 5. In the increase of an open diamond, after a d c, ch 5 and miss 2 tr of previous row, which will be the decrease of 4 on the tight one, 2 on each side. To decrease the open diamond, make 2 tr under last 5 ch of previous row; always ch 3 at end of row and count as a tr, the rows joined together.

Eighth row—After last tr, and before ch 2 is made, join with a d c to middle of first small scallop.

Tenth row—After last d c join to second scallop, ch 2, 1 d c in third scallop.

Twelfth row—Join in fourth scallop.

Make a ch of 46 st.

First row—Miss 4 loops of ch, 2 tr, ch 3, 14 tr, ch 3, 14 tr, ch 3, 3 tr; turn.

Second row—2 tr, ch 3, 1 d c under ch 3, * ch 5, 10 tr, ch 5, 1 d c; repeat from * once more, ch 3, 2 tr; turn (a).

Third row—2 tr, ch 3, 1 d c under 3 ch, * ch 5, 1 d c, ch 5, 6 tr, ch 5, 1 d c; repeat from * once more, ch 5, 1 d c, ch 2, 2 tr.

Fourth row—2 tr, 1 d c, * ch 5, 1 d c, ch 5, 2 tr, ch 5, 1 d c, ch 5, 1 d c; repeat from * once, ch 3, 2 tr, (a) ch 5; turn.

Fifth row—2 tr, ch 2, * 1 d c, ch 5, 1 d c, ch 5, 6 tr, ch 5; repeat from * once, 1 d c, ch 5, 1 d c, ch 2, 2 tr.

Sixth row—2 tr, ch 3, * 1 d c, ch 5, 10 tr, ch 5, repeat from * once, 1 d c, ch 3, 2 tr, (a) ch 1, 12 tr under ch 5, catch with s c in third row, ch 3, catch the same in second row, ch 1; turn.

Seventh row—12 tr with ch 1 between them, ch 1, (a) 3 tr, * ch 3, 14 tr; repeat from * once, ch 3, 3 tr.

Eighth row—Repeat second row to (a), ch 2, 13 tr with 2 ch between under ch 1, ch 2; turn.

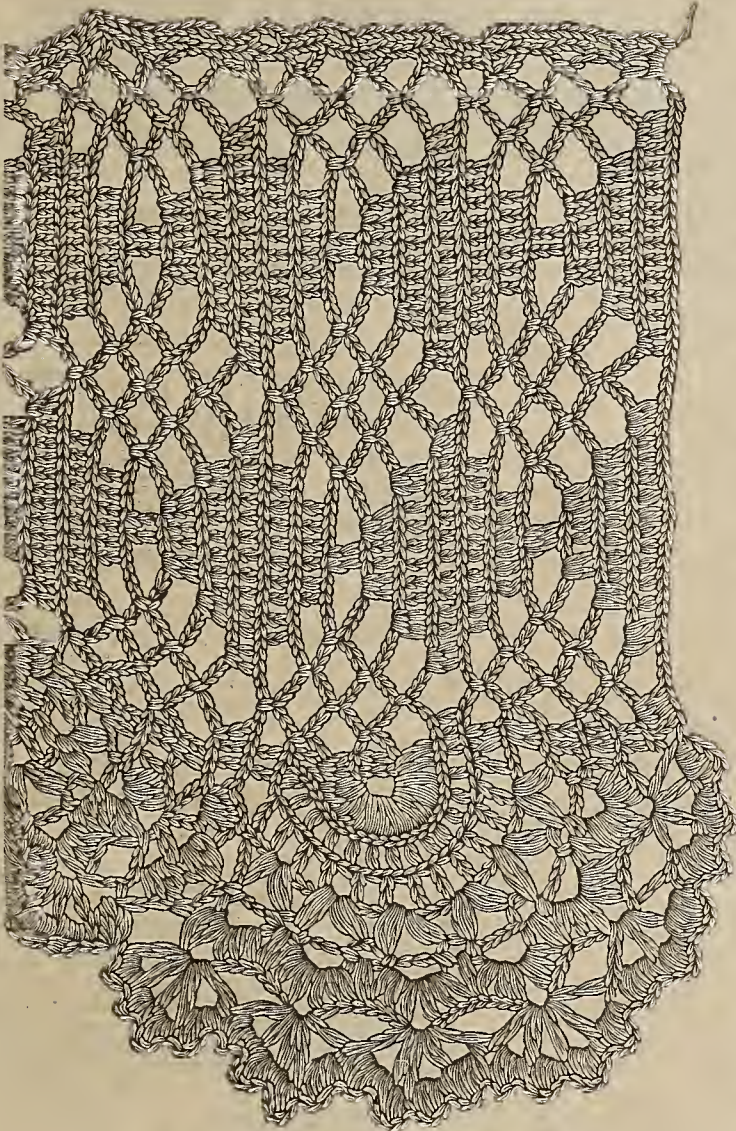
Ninth row—* Thread over hook as if

about to make a tr, insert hook under second 2 ch between tr and keep it on hook, * repeat from * to * 3 times, thus making 7 st on hook, take up thread and draw it through them all at once, ch 1, to keep them together in groups, ch 4 and make another group in the same way under same 2 ch, **; from first * to * is called a double group. Miss 4 st, repeat from first * to * 5 more times, ch 1, repeat third row.

Tenth row—Repeat fourth row to (a), * ch 1, 1 d c under 4 ch, ch 5, 1 d c under same 4 ch that the d c is under; repeat from * 5 more times, ch 2; turn.

Eleventh row—2 tr under ch 5, ch 2, 3 tr under same 5 ch. Although keep last tr st on needle, make another tr in same way under ch 1, another in same way under next ch 5, thus making 4 st on needle. Take up thread and draw through them all at once, ch 1, repeat from * 5 more times; last time repeated there will be only 3 st on needle, ch 1, repeat fifth row.

Twelfth row—Repeat sixth row to (a), * 4 tr with 2 ch between them under 2 ch of sh of previous row. Repeat from * once; * 5 tr with 2 ch between them under



FANCY EDGE WITH DIAMOND INSERTION.

third 2 ch of sh, repeat from * 3 more times, thus making 6 in all, ch 1; turn.

Thirteenth row—* 3 tr and 1 d c under 2 ch of previous row, ch 1, repeat from * all around edge, thus making 22 small scallops in all, ch 1; repeat seventh row from (a).

Repeat from second row for length required.

ELLA.

CONTRIBUTORS' CHAT.

COUGH SIRUP.—One of our friends from Tennessee writes us that she has found this an excellent cough remedy. In these changeable days of spring it is often necessary. Put into a quart of vinegar one dozen good-sized onions and let them simmer down to a pint, strain through a muslin cloth, and sweeten with a cup and a half of brown sugar; let it cook a little longer to get to a sirup.

TO COVER AN OLD SOFA.—It has been covered with hair cloth? Well, that always did look black and cold. If it is worn out, I should use some of the new furniture goods in the well toned-down colors. Remove the old cover, and cut pattern by it. Use silk buttons to fasten with. Do all the fastening in the middle before finishing the edges; for these, tack close, first with No. 1 tacks, then put a braid over the edges and fasten with furniture brads.

ILLINOIS.

FRED M.

WINDOW BOXES.—For a shaded locality,

begonias or fuchsias are the best for the centers, and tradescantia, golden honey-suckle, Kenilworth ivy, for the vines. I saw one last summer under a shaded porch on the west side of the house, that was a perfect beauty. You can make a nice ornament in this way: Break six eggs in a bowl, add a teacupful of milk; first break the yolks, do not beat too much, add a pinch of salt and a tablespoonful of flour or corn starch. Put into your skillet a piece of butter the size of a hickory nut; when it melts, but is not too hot, pour in your eggs. Leave them till they set, then turn in pieces with a flat spad. Do not let them cook till entirely done on the stove; set back to finish it. Some set in the oven to brown on top, then fold over and slide out upon a platter.

MRS. SARAH B.

PENNSYLVANIA.

A NEW INDUSTRY.—I learned of, during a visit to the capital city of the dear old "Buckeye State." It was selling cold, corn meal mush, boiled to just the right consistency and cooled into cakes just the right thickness to make nice slices for frying. He sold it at five cents a "cake," about enough for two persons. He said

he had taken orders at nearly every house on the street.

TOMATO PIE.—Take two quarts of canned tomatoes, put them on the stove and cook down half, then add a pint of sugar, let cook a little, and flavor with lemon, ginger or cinnamon, just as preferred. It makes two pies with one or two crusts, as one likes; it is very nice. I have seen people eat it that wouldn't touch tomatoes in any other way.

MRS. VAN T.

Cuenin, Colorado.

SAVE STEPS.—Take one of the cheap, wooden grape-baskets, lay in it a white towel or strip of cloth for lining, and when you set the table, put in your basket your spoonholder, napkins, salt and pepper shakers, knives and forks, and some of the smaller dishes, and take to the table. Remove these things from the table in the

same way, leaving it filled on the pantry shelf, and you will be surprised at the steps saved.

PEACH LEAVES.—A friend from Kansas writes that peach leaves are a good substitute for hops in making yeast.

LEMON PIE.—Which I use and know to be good:

2 eggs,
1 cup of sugar,
1 lemon,
1 tablespoon of corn starch,
Small lump of butter.

Beat the two yolks and white of one egg, add the sugar and corn starch, mix the juice and pulp of lemon, add the lump of butter, pour on a cup of boiling water; cook till it thickens, pour in crust and bake. Beat the white of an egg, add a tablespoon of sugar, spread on top and slightly brown.

KANSAS.

FEATHERS MADE USEFUL.—Quite a paying industry could be established by saving and preparing for use feathers of the sizes commonly considered useless—especially those obtained from ducks, chickens, turkeys, geese and all wild fowls. The process is in trimming them, particularly the larger ones, from off the stump, which may be thrown away, the plumes being then made use of in the manufacture of a feather cloth or blanket, which possesses the same quality as eider-down, that of being very light as well as very

warm. The plumes which are separated from the stock are placed in a bag; then close the bag, and rub with the hands as one would do in washing clothes. In a few minutes the fibres will separate from each other and form an exceedingly light down. This makes a delightful head-rest, pillow or comfort for bed.

CHAPPED LIPS.—Dissolve a lump of beeswax in a small quantity of sweet oil—over a candle will be the safest way; let it cool in a small cake, and then rub it, slightly warm, on the lips several times a day when chapped. Do not bite your lips or wet with the tongue, especially in cold air or wind.

MRS. VAN T.'S WAY OF FIXING BABY'S STOCKINGS.—Will help some poor mother living, as I do, so far from town, in the depths of winter, when the boughten ones give out. Baby had some knit hose, but they were too short, both at the top and foot, so I set to work and knit out the foot longer, crocheted long tops, letting them come double on the knee where they had commenced to get thin. She now has comfortable stockings to creep in, if not so nice.

SOAP MAKING.—Do not forget that every housekeeper can make her own soap. The mere action of combining the lye and grease requires but five minutes, and when the mixture cools you have as good soap as you need. A box of the "Red Star lye" or "Lewis' lye" can be bought for twelve cents, and either of them, with the grease, will make ten pounds of excellent soap. Keep all the grease not needed for cooking, and render it before putting away in a jar. A housekeeper always feels proud when she has made a quantity of soap as good as she can buy, and at a cost of twelve cents.

IT FETCHES ONE UP VERY SHORT to be seized with Pleurisy, Pneumonia, or any acute Throat or Lung Affection. Dr. Jayne's Expectorant proves a handy help in such attacks, and is besides a good old-fashioned remedy for all Coughs and Colds.

SPECIAL NOTICE.

So many of our subscribers have recently sent for the grand picture, "Christ Before Pilate," that our immense supply was exhausted before the artists could furnish the new supply ordered. Consequently, there are a few days' delay in filling orders for the picture. The new lot of pictures are promised soon, and the supply will be so large that all orders will then be promptly filled. Those who have not yet ordered the picture need not hesitate or delay sending orders.

HAVE YOU READ IT?

BELLAMY'S

"LOOKING BACKWARD"

And his Paper One Year,
Only 75 Cents.

"Looking Backward" is exciting a wider and deeper interest than any book since "Uncle Tom's Cabin," not only in our own land, but throughout the reading world, it having already been translated into the languages of foreign lands. It is an interesting story, describing a possible Golden Age just before us, intensely fascinating to the imagination, and lending new and novel ideas to questions of political economy.

A century hence the world is supposed to have entered the millennial age, and our present time of wars is looked upon as barbarous. There are no merchants, no bankers, no speculators, no men of wealth, as there is no money. And yet all people have a plenty and live an industrious, happy life. Already communities are forming, endeavoring to demonstrate the practicability of the principles taught in this book; and now its devotees are trying to organize a political party—to be called the National, as named in the book—to carry out the programme outlined in the story. It also presents interesting pictures of home life in the time to come; courtship and marriage; education and music; cooking and eating; the improved condition of farm life; and so on through other conditions of the supposed millenium.

The book contains 337 pages, well printed, in large type, and our offer is so liberal that all may obtain it.

Given as a Premium for 2 yearly subscribers to this paper, at 50 cents each.

Price, including one year's subscription to this paper, 75 cents.

We offer it for sale for 50 cents. Postage paid by us in each case. Address

FARM AND FIRESIDE,
Philadelphia, Pa., or Springfield, Ohio.

Our Sunday Afternoon.

BE YE ALSO READY.

READY when the dawning
Comes creeping cold and gray,
And we waken up from slumber
To greet another day.

Ready when the noontide
Is quickening with heat,
And there stealeth o'er the spirit
A languor, dreamy, sweet.

Ready at midnight hour
A vigil still to keep;
The heart awake, though weary eyes
Have closed themselves in sleep.

Blessed the servant found,
What time the Lord returns,
Who ready in his hand doth hold
A lamp that brightly burns.

—London Christian.

THE TATTLER.

WHAT is a tattler? A vile leech, sapping the life blood of human happiness. A black, greedy vulture feasting upon the carrion of society. A busybody who listens gleefully to anything harsh you may say of your neighbor, either pettishly or in a joke, and then carries it magnified and patched up to suit himself, and pours it scorching hot into the ears of perhaps your best friend, and, after succeeding in getting him or her to say something equally harsh, returns to you laden with his precious burden of strife and adds fuel to the smouldering fire. Thus, little by little, this ghoul of human society filches the happiness of human friendship and develops between the kindest of neighbors and the best of friends a feeling of hatred which should be known only to the bosom of demons.

Are you a tattler? Do you sow among your neighbors the seeds of discord and hate? If so, in the name of humanity, let us beg you to desist. We are all liable to err, all too apt to say in a moment of sudden passion or in a silly joke, things which an hour afterward, in a moment of cool reflection, we may heartily wish unsaid. But deeper is the sin and thicker is the crime of him who, taking our weakness for his capital, effects the destruction of the happiness of his neighbor as his interest.

AMUSEMENT?

There is a great demand for something attractive in connection with the church and Sunday-school. The music must be charming, the preaching entertaining, and the exercises of the Sunday-school such as will draw and please the children. Men are not so unwise as to insist on such qualities in connection with other institutions established for the improvement and progress of society. Do parents send their children to school to be amused? Do they require factories to furnish attractive entertainments for young people before they will send their sons to learn a trade?

Children go to school to learn, not to be amused. Young men enter a factory or a store to learn business and to work, not to be entertained. The remuneration and the prospect of promotion furnish sufficient attraction. The sooner parents learn that the Sunday-school and church are not places of entertainment, the better. The less ministers and teachers pander to the thirst for amusement, the better. They are called to teach, not too amuse. Let all men know that they may expect religious instruction and comfort and help in the house of God, and this will draw.—Christian Advocate.

Brown's Bronchial Troches

Contain ingredients which act specially on the organs of the voice. They have an extraordinary efficacy in all affections of the Throat, caused by cold or over-exertion of the voice. They are recommended to Singers and Public Speakers, and all who, at any time, have a cough or trouble with the throat or lungs. "I recommend their use to public speakers."—Rev. E. H. Chapin. "Pre-eminently the best."—Rev. Henry Ward Beecher.

THE SEVENTH VIAL OF REVELATION.

"And the seventh angel poured out his vial into the air, and there came a great voice out of the temple of heaven from the throne, saying, It is done. And there were voices and thunders, and lightnings, and there was a great earthquake, such as was not since men were upon the earth, so mighty an earthquake and so great."—Revelation 16:17, 18.

The announcement that the seventh vial is being poured out is to be made to the whole world. This announcement, like the cry, "Behold, the bridegroom cometh," and "the angel flying in the midst of heaven having the everlasting gospel to preach unto them that dwell on the earth," is made by the children of God—people living here on the earth. The mystical part of this prophecy has in part been accomplished, and will have a complete fulfillment in God's judgments upon great Babylon of Revelation, and all other anti-Christian organizations of the world. But for a literal fulfillment of this prophecy we must look right where the vial was emptied; that is, in the air.

If we will but give one glance at the terrible storms and tempests and irregularities in the forces of nature which have taken place in the last eight or ten years, we will be constrained to acknowledge that this prophecy is at least in process of fulfillment. We turn to the record of cyclones in the United States for one short year ending May 1st, 1884, and we find that there were one hundred and twenty-nine. There were nine in Iowa, thirty-four in Kansas, fourteen in Missouri, one in Dakota, three in Minnesota, nine in Wisconsin, two in Michigan, nine in Indiana, forty-two in Illinois, six in Ohio, besides several others in different localities which are not here recorded. At least six hundred persons lost their lives by these tornadoes, and as many more seriously injured, while the property destroyed reaches to millions of dollars. Although we have not a record of the cyclones since May 1st, 1884, up to the present time, we know that there has been an accumulation of horrors caused by wind, water and electrical forces such as never before was known in the history of the world in so short a time. There has been infused into the forces of nature a disturbing element which has caused great derangement in mundane affairs.


There can be no doubt that we are living in the time of the pouring out of the seventh vial of Revelation, and that we are moving with fearful velocity down the stream of time towards the time of the fulfillment of that part of our Lord's prophecy which says, "Men's hearts shall fail them for fear and for looking after those things that are coming on the earth; for the powers of heaven shall be shaken."

In many localities in our land, where the inhabitants have witnessed and passed through some of these awful tornadoes, this prophecy is being fulfilled. If a peculiar shaped cloud is seen to arise, men's hearts begin to "fail them for fear and for looking after the things that are coming on the earth; for the powers of [the atmospheric] heaven shall be shaken."


These electrical disturbances and atmospheric concussions mark the time of the pouring out of the seventh vial of wrath and the coming of the third woe. They also testify that the second personal coming of the Son of Man and the end of this present age or world draweth nigh. What we do we must do quickly. We know not what a day may bring forth. Let us, therefore, be wise and heed our Lord's injunction: "Watch ye, therefore, and pray always that ye may be accounted worthy to escape all these things and to stand before the Son of Man."

It is just as certain that these things will, sooner or later, come to pass as it is that the sun will rise and set on the morrow. "He that hath ears to hear let him hear." C. P. DAVENPORT.

Envelopes were first used in 1839.
The first steel pen was made in 1830.
The first air pump was made in 1650.
The first lucifer match was made in 1829.
The first iron steamship was built in 1830.
Ships were first "copper-bottomed" in 1783.
The first use of a locomotive was in 1819.



You can make a large sum of money at work for us in your own locality. During the past few years, those who have thus worked have received over Five Millions of dollars for their services—more than a barrel of money. We want a few more workers at once. The work is easy, pleasant, adapted to both young and old of either sex. You can work all the time or in spare time only. Any one can do the work after studying our directions for a day or two. This is the chance of a lifetime for those who apply at once. Any one anywhere can earn \$100 per month. Great workers, under the most favorable conditions, earn \$20 a day and upwards. No class of people in the world are making so much money, without capital, as those at work for us. Whatever you have done, or whatever you may do, you should look into this royal chance. You will find that you can easily make all that we claim, and more. If you write to us before we secure all the workers we need, we will lay all before you FREE. Better write before you rest, and then if you conclude not to go to work, or if we cannot employ you, no harm is done. Every one of our workers makes big money. TRUE & CO., Box 261, Augusta, Maine.



TEN POUNDS
IN
TWO WEEKS
THINK OF IT!

As a Flesh Producer there can be no question but that

SCOTT'S EMULSION

Of Pure Cod Liver Oil and Hypophosphites
Of Lime and Soda

is without a rival. Many have gained a pound a day by the use of it. It cures

CONSUMPTION,

SCROFULA, BRONCHITIS, COUGHS AND COLDS, AND ALL FORMS OF WASTING DISEASES. AS PALATABLE AS MILK. Be sure you get the genuine as there are poor imitations.

AGENTS WANTED FOR CORPORAL

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It beats them all. No book like it. Everybody wants it. 2000 illustrations; humorous, pathetic, fascinating. Hundreds of dollars to hustlers. Old and young buy, also thousands of G. A. R. and Sons of Veterans. One agent has ordered over 700 books; another made \$83 in 4 days; another took 15 orders in 30 minutes in G. A. R. Post. Choose territory at once. 24 attractive illustrations free, with circulars and terms. Write

H. G. Hamilton & Co. Publs., 214 Superior St., Cleveland, O.

If afflicted with sore eyes use Dr. Thompson's Eye-Water

\$1.200 in Presents Given Away,



In our February issue we published the names of the first 134 persons who replied to our advertisements of where Money was first found in the Bible. \$1,200 more in Premiums to be given away, in order to get our popular home magazine into the hands of as many people as possible. The person telling us the place in the Bible where the word Gold is first found (book, chapter and verse) before May 15th will receive a Beautiful Silver Tea Service valued at \$100. Should there be more than one correct answer, the next person will receive a Parlor Organ valued at \$100; the next person will receive a Silver Tea Service valued at \$60; the next person a Parlor Organ valued at \$75; the next one a Silver Tea Service valued at \$45; the next three persons will receive a Family Sewing Machine valued at \$35; each of the next five persons will receive an Imported Decorated Tea Set of 56 Pieces valued at \$10; each of the next two persons will receive a Gold Filled Hunting Case Watch valued at \$35. Each of the next 100 persons will receive a Beautiful Triple Plated Caster, with Five Cut Glass Bottles valued at \$3.50. The next two persons will receive a Beautiful Silk Dress valued at \$25. The next two persons will receive a Solid Gold Watch valued at \$75. With your answer enclose 80c. silver, if you can, or stamps, for which we will send you HOME GUEST each month. We make this offer simply to introduce our paper and secure new subscribers. Satisfaction guaranteed or money refunded. Mention this paper and don't forget to enclose 80c. Address, PUBLISHERS HOME GUEST, 79 Nassau Street, New York.

The Best WASHER



We will guarantee the "LOVELL" WASHER to do better work and do it easier and in less time than any other machine in the world. Warranted five years, and if it don't wash the clothes clean without rubbing, we will refund the money. AGENTS WANTED in every county. We can show proof that agents are making from \$75 to \$150 per month. Farmers make \$200 to \$500 during the winter. Ladies have great success selling this Washer. Retail price, only \$5. Sample to those desiring an agency \$2. Also the Celebrated KEYSTONE WRINGERS at manufacturers' lowest prices. We invite the strictest investigation. Send your address on a postal card for further particulars.

LOVELL WASHER CO., Erie, Pa.



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CATARRH, BRONCHITIS, ASTHMA.

Not a Drug, but a New Scientific Method. A Home Treatment. Used in the Consumptive Hospitals of Europe by Dr. Louis Andral, Paris, and Prof. Carl Broca, Milan, and death-rate at once reduced 85 per cent. 4,900 cures in 50 days. Catarrh, Bronchitis, Asthma readily cured. See accounts of discovery in New York Voice, Christian Advocate and Express, Dec. 8th, 1887. Cures are rapid, certain, permanent. No failures. A Trial costs you nothing. Send name, address, age, full statement of your disease, and receive Ten Days Trial Treatment FREE, with Free Diagnosis and Large Book. Address THE NEW MEDICAL ADVANCE 62 E. 4th St. Cincinnati, O.

IF YOU WISH TO PURCHASE WALL PAPERS

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thus saving middle profits, send 8 cents (which will be deducted from first order) and we will mail you a complete line of samples of any or all the following grades: BEST BROWN BACKS at 5c. a piece. Regular Price 10c. BEST WHITE BACKS at 8c. " " " 15c. BEAUTIFUL GOLD PAPERS at 10c. " " " 25c. BEST GOLD PAPERS at 25c. " " " 50c. EMBOSSED GOLD PAPERS at 20c. " " " 30c. BEST EMBOSSED GOLD at 35c. " " " 75c. Borders to match as low in proportion. ALL PAPERS GUARANTEED full eight yards long, perfect and latest Spring styles.

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Mention this paper when you write.

JOYFUL NEWS.



To advertise this entirely NEW MACHINE for the first time I am authorized to make this GRAND LIBERAL OFFER for 60 DAYS. On receipt of only \$1.00 to pay for advertising expenses, etc., I will send to any address one of the celebrated miniature High Arm Machines warranted same style and make as here represented, securely boxed and in good running order. The table, drop leaf and panel drawer fronts are made of fine metallic artistically decorated, as are all other essential parts. Send for one immediately and recommend it and our house to your friends. As this offer is to advertise these machines, and is strictly genuine, no attention will be paid to letters unless containing \$1.00. Respectfully yours, A. LAWRENCE, 342 Superior St., Toledo, Ohio. Mention this paper when you write. Lawrence is a reliable business man and will do as above stated.—Ed.

1000 PRESENTS

Gold Watches, Diamond Rings, Silk Dresses GIVEN AWAY

We have just given away 400 elegant presents to successful competitors in last Bible-hunt contest (names given in our February issue). We want more subscribers, and propose as follows: send us 2c. (stamps or silver), and receive our paper, LADIES' HOME VISITOR, regularly for 4 months. To first person who answers this advertisement, and tells us correctly where the word RIVER first appears in the Holy Bible, we will give a handsome Gold Watch (see cut). Ladies' or gent's size. To next one giving correct answer, we will give an expensive Silk Dress, warranted to fit if correct measurements are given. To third person answering correctly, we give a magnificent SOLITAIRE DIAMOND RING. To fourth person, a Silver Chisel and Watch to next ten. Beautiful Gold Pen and Pencil. Next 20, a Pair of Corsets; next 100, Handsome Foulard Tea-Gown; next 200, a reversible Fountain Pen (retail price \$1); next six, a fine Toilet Set; next 30, Ladies' Complete Work-Box. This makes 430 presents. But if we receive 600 more replies to this advertisement, containing 2c. for subscription, and a correct answer to Bible question, we will give each one, absolutely free, a beautiful Gold Ring, Pearl Shell Neckpiece, Bracelets, or some other article. Either jewelry or wearing-apparel. This is the grandest offer we ever made. We do as we agree. LADIES' HOME VISITOR has been published seven years, and we defy any one to prove we ever made a promise we did not keep. This offer is good till July 29 only, as list of successful contestants will appear in August issue of paper. Write now. Send 2c., and tell where RIVER first appears in Holy Bible. Address, Avon Publishing Company, Boston, Mass.

Mention this paper when you write.

DRESS REFORM GOODS.

Agents wanted for Reform Skirt, Ladies Waist, etc. New goods, reduced prices. Don't you want to represent us in your locality and make a little money? Don't waste your time on old goods, but try the new. Catalogue free. LADIES SUPPLY CO., 231 W. Washington St., CHICAGO.

Do not fail to mention Farm and Fireside when you write.

Our Farm.

THE POULTRY YARD.

Conducted by P. H. Jacobs, Hammonton, New Jersey.

A HEATER AND VENTILATOR.

How to warm the poultry-house, and how to ventilate it without draughts of air on the fowls at night, are unsolved problems. The object should be to carry off the foul air, and also to give a supply of warm, pure air. It is not necessary to warm a poultry-house above 50 degrees, and even 40 degrees is sufficient, as too much warmth will cause the birds to become tender. Any degree above the freezing point will serve the purpose.

We give a design for warming and ventilating a poultry-house, trusting that our readers will improve on it, as we only aim to give the idea. Fig. 1 is an ordinary kerosene lamp, of any size or design preferred, A showing the lamp, B the lamp flue, and C C the ventilator. The lamp will draw the foul air from the room, which permits fresh air to come in to fill the vacuum. The smoke and gases pass out through the flue, B, to the outside. The pure air is warmed by passing in at the bottom of the ventilator (through holes for that purpose) and coming out at the top. If desired, the ventilators may be as high as within a few inches of the roof. Fig. 2 shows the heater (lamp, etc.) in position, A showing the floor; D, the heater; B, the lamp flue; and E, a revolving cowl to protect against the wind blowing the lamp out. K K are tubes extending outside for bringing in fresh air if preferred.

This design is intended to show a cheap contrivance, and the whole can be made by any tinner. It combines several advantages, as follows: 1. It carries off all impure air. 2. It warms the house with pure air. 3. It carries off the moisture and keeps the house dry. 4. It will cost but little.

If preferred, the pure air may be brought from the outside by tin tubes, as shown at K K, Fig. 1, which may extend through the wall, but they are not necessary. The heating apparatus may be in a little pit, if desired, or a small, coal oil stove may be used instead of a lamp. The lamp-globe should be of tin, with a piece of mica in front for observing the flame. The whole should be covered with wire to prevent the fowls from interfering with any portion. The lamp should always have a free circulation of air around it.

FIG. 1.—HEATER AND VENTILATOR.

SITTING HENS.

This is the season when the sitting hens will be busy, and when lice will have a harvest. Before placing a sitting hen on eggs, give her new material, first dusting both the hen and the material of the nest with insect powder. At the end of seventeen days, which will be only a few days before the chicks come out, again change the material of the nest, and use the insect powder freely, which will prevent the young chicks from being infested with lice.

PUSH THE DUCKS.

The market for young ducks (green ducks) usually ends about the middle of June. Feed your young ducks heavily, so as to get them in market as early as possible. A pair weighing from seven to eight pounds is more preferable than a pair weighing more. Ducks are nearly always sold in pairs, and they should consequently be as uniform in size and appearance as possible.

APRIL PRICES.

Broilers have already gone up to forty cents a pound in the New York markets, for chicks weighing a pound and a half each, with a prospect of attaining sixty cents per pound. April is the best month in the year for selling all kinds of poultry, and especially young chicks. They should be sold dressed, as the shipping of them alive entails too much risk, the loss on the journey sometimes being very large.

THOSE INCUBATOR PLANS.

We have been asked why we do not publish the incubator plans. Simply because they have been published before, and require more space than can be given them. As they may not interest many, it is better to allow those desiring them to send for them, by addressing P. H. Jacobs, Hammonton, N. J., enclosing two stamps for postage and printing. The plans are illustrated, and give full details for making the incubator, as well as directions for

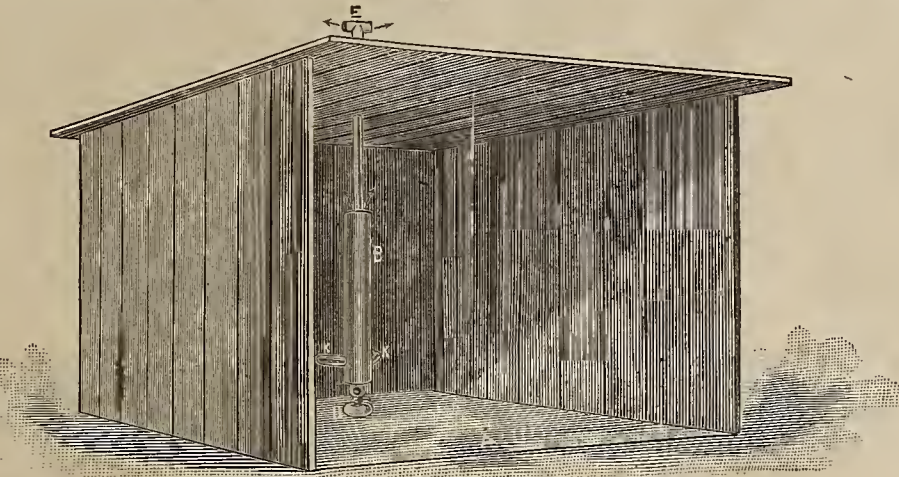


FIG. 2.—HEATER AND VENTILATOR IN POSITION.

operating it. Hundreds are in use, and it gives satisfaction. They are not for sale by any one, as any person can make the incubator at home, one holding 300 eggs costing about \$12 for material.

STOP THE CORN.

Now that warmer weather is nearly here, it is not advisable to feed corn, except sparingly, to laying hens. It is too concentrated and heating. Some kind of bulky food is better, such as grass, cabbage, or cooked potatoes. If a small ration of meat is supplied daily, with plenty of vegetables, the hens will need little or no grain.

INQUIRIES ANSWERED.

Gapes.—Mrs. M. V. J., Georgetown, Illinois, asks: "What will cure chicks with the gapes?"

REPLY:—One of the best remedies is a drop of spirits turpentine on a bread crumb, forced down the throat.

How Many Fowls on a Plot?—H. J. B., Alton, Ill., writes: "How many fowls can be kept on half an acre?"

REPLY:—It is not too much room for fifty fowls.

Sorghum Seed as Food.—Mrs. E. R., Spring Valley, Ohio, writes: "Is sorghum seed good food for chicks or fowls, and is it an egg-producing food?"

REPLY:—It is excellent for all classes of poultry.

Picking Feathers.—G. F., Callicoon Depot, N. Y., writes: "Please inform me how to prevent a parrot from picking her feathers."

REPLY:—It may be due to lice. Try dusting the bird well with fresh Dalmatian insect powder.

Weights of Breeds.—E. T. A., Normandy, Tenn., writes: "What is the average weight of White Leghorns, White Minorcas, White Plymouth Rocks and White Javas?"

REPLY:—White Leghorns, one year old, the male should weigh about 6 pounds; White Minorca, 7 pounds; White Plymouth Rock, 8½ pounds; White Java, 9 pounds.

Dividing the Flock.—L. S. C., Columbia City, Indiana, writes: "How many fowls should be kept on one fourth of an acre, and should they be divided into two flocks?"

REPLY:—About twenty-five hens are sufficient for that space. The flock need not be divided, but the plot may be divided into two yards of one eighth of an acre each.

Roup.—Mrs. M. C. C., Hampton, Neb., writes: "When hens have canker in their throats, and do not run at the nose or eyes, is it roup? What could cause lumps about the size of peas to suddenly come on young, healthy turkey gobblers' heads? The hens had none at all."

REPLY:—The disease is roup in both cases. When lumps appear, the birds should be destroyed, as it is then of a scrofulous nature.

Flat Roofs.—E. A. P., Long Ridge, Ark., asks: "What kind of roof is the best, considering the cost, flat or steep, for poultry-house?"

REPLY:—The cost of a flat roof will be much less than a steep one, but will not, perhaps, be so good or so durable. A flat roof, however, covered with tarred felt, and painted once a year, will last many years, and cost less than

a tin roof or a steep roof covered with shingles.

Overfat.—R. H., Elkland, Pa., writes: "What ails my hens? They lose the strength of their legs; they shiver on a warm day, and after eight or ten days, die. They have a dry roost. Food principally corn and oats."

REPLY:—Due to feeding too much grain, the fowls being fat, the male injuring the hens when in a fat condition. Remove the male and reduce the allowance of grain.

Bed-bugs in Poultry-House.—R. H. R., Columbus, Kan., writes: "I am bothered every summer with bed-bugs in my hen-house. Please tell me how to get rid of them. I have tried coal oil, lime, and scalding with boiling water, still there are millions each year. I am not alone; it seems to be quite a general thing in Kansas."

REPLY:—Kerosene, applied frequently, the walls, roosts, etc., being well saturated, will kill them.

Weights of Ducks.—Miss A. W. B., Healdsburg, California, writes: "I noticed in your paper an article about raising young ducks, in which you mention about weighing seven pounds each at ten weeks old. Would you be kind enough to send your method of feeding them in order to bring them up to that weight?"

REPLY:—We stated that they would weigh

seven pounds per pair when ten weeks old, which is not excessive for Pekins. The mode of feeding is simply to give a variety of food, and to feed four times a day. We have had them to weigh five pounds each when ten weeks old.

Injury by the Male.—A. H. E., East Saugatuck, Mich., writes: "I have a few hens that are unable to walk. They remain well and hearty otherwise, for a few days, then break down entirely. What is the cause, and what the best remedy?"

REPLY:—Difficulty is due to heavy weight of the male and fat condition of the hens, they being injured in the spine. Remove the male from the hens.

Preserving Eggs.—W. G. L., Oxford, Ohio, writes: "Give a good recipe for preserving eggs for winter markets. Would like very much to have information as to packing and time to pack for winter market."

REPLY:—We have frequently done so. Keep the eggs in a cool place, on racks, and turn them half over twice a week. No packing material is necessary. Use eggs from hens not in company with males.

CORRESPONDENCE.

SELLING SQUABS.—I wish to correct a statement in your paper of February 15th, that the quality of the squabs does not depend on the color of the squabs. We have sold squabs for years, and the difference is this: A fat squab will be light and a poor one dark, no matter what color the feathers are, and they are so sold in the market. Old pigeons bring about half the price of squabs in the market.

Tuckerton, N. J.

Mrs. M. F.

EARLY CHICKS.—What to do with early-hatched chicks, when one has none of the conveniences of a regularly organized hennery, is often a puzzle. It is cold out of doors: there are stormy days, and close confinement is bad for them. We had a stable and carriage-house with the second floor laid, windows in three sides, arranged in the first instance for a workshop. We brought our first two hens, with twenty-one chicks, here the last of March, tying the hens in the corners with a yard or so of strong string. Thither came three more, until we had five mothers and fifty-three chicks. One hen we placed in the middle with a slatted coop. The chicks ran together in a most sociable fashion, and the mothers became quite accustomed to the sight of each other. Every three or four days we provided clean ashes and fresh dirt, and gave each a tuft of grass roots. They were fed on scalded Indian meal, bread crumbs, broken oatmeal, and, as soon as they could eat it, cracked corn. About twice a week they were given very small bits of meat. The windows were open through the middle of the day. They had plenty of sun and air and fresh water. There were very few deaths. By May we had a splendid lot of chickens, which were then placed out of doors, they proving strong and hardy. Indeed, our improvised hennery was a source of surprise and entertainment to the neighbors. Cold, damp spring days are very hard on newly-hatched chicks, unless well sheltered. To wait until May makes late chickens, and even then there are often cold storms. A. M. D.

Newark, N. J.

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Queries.

READ THIS NOTICE.

Questions from regular subscribers of FARM AND FIRESIDE, and relating to matters of general interest, will be answered in these columns free of charge. Querists desiring immediate replies, or asking information upon matters of personal interest only, should enclose stamps for return postage. The full name and post-office address of the inquirer should accompany each query, in order that we may answer by mail if necessary. Queries must be received at least two weeks before the date of the issue in which the answer is expected. Queries should not be written on paper containing matters of business, and should be written on one side of the paper only.

Bean Threshers.—J. R. T., Kearney, Neb. Bean threshers are manufactured by Chas. H. Bidwell, Albion, N. Y.

Incubator Plans.—J. L., Peoria, Ill., and others. See article on incubator plans in "Poultry Yard," this issue.

Barbed Wire.—T. H. D., Tionesta, Pa. Barbed wire can be obtained from Washburn & Moen Manufacturing Co., Worcester, Mass.

Cream Separators.—T. B., Prophetstown, Ill. You can get a DeLaval cream separator of P. M. Sharples, Elgin, Ill. Full instructions accompany the machine.

Silos in the South.—C. W. F., Tullahoma, Tenn., asks if a silo would be a success in the South. We know of no reason why a properly-constructed silo would not be a success with you.

Lard Oil.—L. P., Hudson, Ohio. The lard as it comes from the hog is pressed at a low temperature. This separates the lard oil from the oleine and stearine, which are used for making candles.

Soil for Red-Top.—J. H., Reading Center, N. Y. Red-top is not adapted to dry lands, but thrives on moist lands. It is suitable for permanent pastures or meadows on lands too wet for better grasses. For such lands it is a valuable grass. Sow not less than two bushels per acre, early in the spring or in August.

Postal Query.—R. J. L., Hannibal, N. Y., writes: "If a letter is not sealed, will a one-cent stamp take it to its destination?"

REPLY:—No. Any one who attempts to evade the payment of postage is liable to a penalty. "Any person who shall conceal or inclose matter of a higher class in that of a lower class, and deposit or cause the same to be deposited for conveyance by mail, at a less rate than would be charged for both such higher and lower class matter, shall, for every such offense, be liable to a penalty of ten dollars."—*Postal Laws and Regulations.*

Club-Root in Cabbages.—S. N. V., of Stoners, Pa., asks: "What causes club-root, and how can it be prevented?"

REPLY BY JOSEPH:—What causes club-root is more than I can tell; nor have I ever heard anybody else pretend that he could tell. Undoubtedly it is a disease, and to prevent it is easy enough. All you have to do is to raise the plants on fresh ground, and also set the plants in fresh soil. Rotation is the sovereign preventive; and in regard to cabbages, it is an old rule never to plant the crop twice in succession on the same ground, except, perhaps, in very old gardens or on limestone soil. Even then strict rotation is the safer way.

To Get Rid of Skunks.—M. E. C., Hampton, Neb., writes: "If you are doubtful as to the nature of your midnight prowler, leave some eggs out in a low nest. If the shells are left, it is probably skunks. Now take one or more eggs and break a small hole in the end and pour out a part of the white and put in some strychnine. Now take another egg and break it in the middle and empty it; slip one half of this empty shell over the end of your prepared egg. Put this in the nest where the eggs were taken the previous night, and you will probably find your 'striped cat' sleeping its last sleep, not far off, in the morning. I have found two for only one egg. And this method will not scent the premises like trapping them will, and is more certain. If you have pigs running out, you must be careful."

Fodder Corn.—J. T., Cable, Ohio, writes: "I desire to sow some corn for sheep feed, to be cut with a wheat binder. What kind of corn shall I sow, and how shall I sow it?"

REPLY:—From your letter, we presume that you intend sowing it broadcast. Do not do so. Plant it in drills, about three and one half feet apart, dropping the grains five or six inches apart. Cultivate just as you would common field corn. This will give you more and better feed than if you sow it broadcast. Would not advise you to pay a fancy price for any special variety. Plant the common field corn that does best in your locality. You can cut it any time after it blossoms, but the best time is when it reaches maturity; that is, when the ears begin to glaze. Fodder corn is one of the most valuable crops that can be grown. Many consider good, bright, well-cured fodder corn more valuable for feeding purposes than timothy hay.

Ashes—Cow Manure—Corn-Cobs.—S. E. W., of McGaheysville, Va., asks: "Will it pay me to haul chestnut and oak ashes thirteen miles, when I have to pay fifty cents a ton for them, and pay \$2 or \$2.50 for hauling?—Will it pay me to mix cow droppings with fertilizer, and if so, in what proportions?—Is there a way to get corn-cobs fine enough for drilling with wheat next fall, or had I better haul them out as they are? I have a large lot."

REPLY BY JOSEPH:—Certainly, it will pay to haul anything that might deserve the name, unleached wood ashes, thirteen miles, and pay fifty cents per ton for it. It is a good bargain.

—There is no special advantage in mixing cow manure and fertilizer. I would just as soon apply them separately. The only way of getting corn-cobs fine enough for drilling with wheat (and it is a very good one) is to burn them, and use the ashes.

Dissolving Bones.—L. M. W., of Loyal, Wis., writes: "Softening bones by mixing with moist wood ashes takes a long time. Would it not be better to leach the ashes and boil the bones in the lye until dissolved; and then mix the liquid with dry earth? Would any plant food escape by such method?"

REPLY BY JOSEPH:—The proposed plan is impractical, because it would take a large amount of lye, and days of boiling, to dissolve a few bushels of bones. I think our friend would not make more than a single trial. Where labor and wood is worth anything, it would be cheaper to buy a quantity of bone meal or floats, and mix them with the ashes, and apply as soon as desired. Whenever we can allow the time needed for the operation, the plan of putting ashes and old bones in alternate layers, keeping the whole mass moist, is much better than the one suggested, and we get all this material in one mixture, while the ashes after being leached in the other method, have to be applied separately if we want to utilize all its plant food. Of course, no plant food is lost in leaching or boiling.

Solubility of Phosphate Rock.—J. S. B., of Grahamville, Fla., asks: "When you say that the phosphoric acid in ground rock is not available, do you mean that this applies only to its immediate availability, or do you hold that such ground rock, when put on the land in this raw state, will never be released and in condition for absorption by plants? If it gradually dissolves, however slow this may be, it seems that we might use it for orange trees. Would burning make the phosphoric acid in the rock available?"

REPLY BY JOSEPH:—The phosphoric acid in phosphate rock, when finely ground and applied to the soil, will gradually become available by the solving power of carbonic and perhaps other acids. I believe that it is a cheap source of this plant food for use in orchards and small fruit patches, provided that the needed potash is also supplied in some form. Burning will not make the phosphoric acid in phosphate rock soluble.

Horseradish Culture.—J. M., Panville, Ill. Horseradish can be profitably grown as a second crop, succeeding early cabbages, radishes or beets. When the roots are prepared for market in the fall, all the small rootlets are broken off and kept for planting. These rootlets, which are one fourth to one half inch in diameter, are cut into pieces about five inches long. The bottom of each "set" is cut slanting, so it will surely be planted out right side up and grow into a handsome root. These sets are kept through the winter in boxes of sand, in a cool cellar, or pitted in the ground. About a month after the early cabbages or beets are planted, the sets are put out, about eighteen inches apart between the rows, two inches below the surface, in holes made with a sharp-pointed stick. If it grows so rapidly as to interfere with the other crops, cut off the tops with a hoe. Good, rich, garden loam and the cultivation suitable for the crop it follows, will produce large yields of horseradish. Five tons per acre have been grown. It makes its growth during July, August, September and October. Late in the fall, when the plants have completed their full growth, they should be dug. After trimming off the tops and small rootlets that are to be kept for next season's planting, the roots should be pitted in the ground like beets or turnips.

Fertilizer for Tobacco.—A. H., of Dry Ridge, Ky., asks: "Would you recommend to use wheat bran on timothy sod, as a fertilizer for tobacco? If so, how much per acre, and when apply it to secure a large yield? If any other fertilizer (say Mapes' potato manure) is better, how much should be used, and when applied?"

REPLY BY JOSEPH:—Wheat bran, when it can be had at less than \$15 per ton, might sometimes be used as a fertilizer. As a rule, I do not advise its direct application to the soil. We can make more of it by feeding it to stock and then applying the manure. The tobacco plant, it should be borne in mind, makes greater demands for potash than any other crop, and a manure for tobacco, consequently, should be very rich in potash. Wheat bran is hardly the thing, although it may be composted or supplemented with potash salts or unleached wood ashes, and will then be more likely to give good results. In regard to quantity, we do not run much risk of putting on too much. My motto is, the more the better, and in all such cases I recommend using all that the grower can afford. Mapes' potato manure is a good and safe fertilizer, but it hardly contains potash enough for tobacco. Mapes' "fruit and vine" manure, or the "special tobacco" fertilizer, either of which has ten or more per cent of potash, would probably give much better results. It should be applied broadcast before planting, and harrowed in—say, at the rate of from 600 to 1,000 pounds per acre. Cotton-seed hull ashes will also be found to be a very superior fertilizer for the tobacco crop.

VETERINARY.

Conducted by Dr. H. J. Detmers. Veterinarian of the Ohio Agricultural Experiment Station, and Professor of Veterinary Surgery in Ohio State University.

To regular subscribers of FARM AND FIRESIDE, answers will be given through these columns free of charge. Where an immediate reply by mail is desired, the applicant should enclose a fee of one dollar, otherwise no attention will be paid to such a request. Inquiries should always contain the writer's full address. Queries must be received at least two weeks before the date of the issue in which the answer is expected. Subscribers may send their veterinary queries directly to Dr. H. J. DETMERS, 35 King Avenue, Columbus, Ohio.

Warts on Cow's Teats.—M. B., Alma City, Minn. Put a ligature around each wart at its base. For further information, I have to refer you to recent issues.

Barren Mare.—W. B. S., Marysville, Ohio. I suggest that your mare may be too old to breed. You say she is probably about 18 years old. May it not be that she is a few winters older?

Twins Heifers.—W. A. T., Benton, Ohio, asks: "Will twin heifers breed?"

ANSWER:—If there is no arrest of development or malformation in the sexual organs, a twin heifer will breed just as well as any other heifer.

Lameness.—M. Y., Princeton, Ind. Almost any lameness in horses, of over a year's standing, but especially if blisters, etc., have been repeatedly applied, is, as a rule, incurable, because the morbid changes produced are of a permanent character.

Garget.—W. A. G., Orlando, Fla. The disease, it seems, is garget. In the beginning, thorough and frequent milking, say, once every two hours, would have saved the spoiled quarter. It is now too late to do anything, and as there is no tenderness, nothing needs to be done. The three remaining quarters will produce nearly as much milk as did formerly all four.

Founder.—L. S. B., Wilsonburg, W. Va., It seems your horse suffers from chronic laminitis, or so-called founder. Ask your blacksmith to shoe him with bar-shoes, and he probably will go better. There is no cure after the disease has become chronic. I am not dealing in books and instruments; for the former, apply to a bookseller, and for the latter, to a dealer or maker.

Probably a Rheumatic Affection.—A. W., Hoxie, Kan., writes: "My mule seems to be stiff in all four legs, especially in his hind legs, and it seems to worry him considerably while travelling on the road. When he stands still he very often jerks up his hind legs, first one and then the other, as if with pain, and then keeps it moving on the toe. He is in poor flesh, and does not eat his grain regularly, and his hair is harsh and ragged."

ANSWER:—Your description is that of a severe rheumatic affection. Still, symptoms

somewhat similar to those described are also produced by pain in the feet—chronic laminitis, for instance. A case like yours requires an examination, or at least a correct and complete description of all symptoms observable.

Lameness in the Foot.—C. R., Long Green, Ind. First, make a thorough examination of the hoof, but especially of the sole, and if you find any soreness, it may be well to apply a poultice for a day or two, but if you do so, renew the poultice at least twice in twenty-four hours, and see to it that the powdered flaxseed does not creep up above the hoof. If the animal does not get considerable relief from the poultice, consult a veterinarian.

Lameness.—W. B. R., Salem, Ohio. It is utterly impossible to tell you what causes your animal to be lame, unless you give an intelligent description and state all the particulars. The best advice I can give you is to employ a veterinarian, and have your animal examined. As I receive scores of letters which contain such vague statements, upon which no diagnosis can be based, I will say, once for all, that after this, all such letters will go into the waste-basket.

Itiated Appetite—Restless Colt.—V. S., Zizkon, Dak., writes: "What will prevent cattle from gnawing old wood or boards?—While in the stable my colt lifts up one hind foot, holds it a few seconds and then puts it down to rest. What is the trouble?"

ANSWER:—Feed your cattle good, wholesome, and sufficiently nutritious food, and enough of it, and then provide them with salt, and the itiated appetite will disappear. As to your colt, the same, very likely, does not know what to do with his idle time. American colts want exercise outdoors, and are apt to fall into bad habits if always kept tied in the stable.

Cough and Swelling.—W. F. C., Cornell, N. Y., writes: "My horse had a bad cough and was quite sick, almost refusing to eat. There came a hard swelling between his fore legs from his breast, separating in two ridges back of his fore legs, and extending half way toward each flank. He is very thin on account of loss of appetite."

ANSWER:—Your horse suffers from some respiratory disorder and subcutaneous dropsical effusions. More I cannot tell you; your statement is too meagre. The best you can do for your animal is to have the same examined and treated by a competent veterinarian.

Hair Came Off from Lower Extremities.—C. C. F., Columbus, Ill., writes: "What is the matter with my eight-year-old mare? About four weeks ago she began to shed around the hock joints in spots. All the hair in these spots came off. Now she is bare pretty nearly all over, and what is left is loose, and could be carried off."

ANSWER:—Clean the legs thoroughly with soap and warm water; then, before they are perfectly dry, give them a good wash with a three-per-cent solution of carbolic acid (three parts of carbolic acid to one hundred parts of water), and repeat this treatment in about five or six days. At the same time, subject the stall to a thorough cleaning.

Dog Distemper and Tapeworm.—P. F., Uniopolis, Ohio, writes: "My dog first began to cough as though there was something in her throat, and then her hair became rough. She has improved in flesh of late and has almost quit coughing. But small worms pass from her about three fourths of an inch in length and rather flat, resembling a tapeworm."

ANSWER:—Your dog has dog distemper and also a tapeworm, probably *Tænia senata*. Unless the dog is a valuable animal, it may be best to kill her. If you wish to save her, shut her up, burn all the worm ends that pass off, and give, on an empty stomach, one drachm extractum felis maris, either between two small and thin pieces of bread, or wrapped up

in a thin slice of meat. Repeat the same dose on the next day, and if then the tapeworm does not pass off very soon after the second dose, give a few, say, about 15, grains of calomel, also with a small piece of meat. Keep the dog shut up until the tapeworm or tapeworms have passed off, and burn the latter and all the pieces. After the dog has been freed from the parasites, you must not allow her to kill and to eat rabbits, because the larvæ or cysts of the tapeworms (if *Tænia senata*) are in the rabbits. Hunters call them "pox."

Probably a Case of Distortion.—J. C. W., South Sudbury, Mass., writes: "My mare's hind fetlock joints are both enlarged and bony. Originally, the enlargements were soft and puffy. They snap or crackle whenever she changes her position. On first starting up, she strikes on her hind toes first and then drops down on her heels; that is, she does not strike square on her hind feet when starting up. When I wish to raise her hind legs, she lifts them very reluctantly, then draws them away up, as if it gave her pain, and then puts them down slowly. She takes every opportunity, when standing, to stand where she can get her hind toes down and the heels up, and yet, if she is shod with high heels, she cripples badly."

ANSWER:—It seems that the ligaments of the pastern joint, and perhaps, also, the tendons of the hind feet, have been severely strained and have never been restored to a normal condition. As the case is an old one now, it is impossible to decide, without an examination, whether a rheumatic affection had anything to do with it or not. It is possible that such was the case, though it is immaterial now, because the time for successful treatment has passed.

Two Lame Mules.—J. N. S., Garfield, Mo., writes: "What ails my mules? The first one is a fine four-year-old mule and has been lame in right hind leg for nearly one month. Was taken rather suddenly. I thought it a strain at first, but think now it must be hip sweeney; for some time I have used turpentine freely, but it does no good. The hip has not shrunk any that I can discover. In standing, the mule lets the front part of her foot rest on the ground and throws her body over to the left side; she seems to limp worse when going up hill. The second mule has not done well for some time. She has not much appetite; will eat oats, but very little corn. She acted as though badly foundered, but do not think it a case of founder. She eats as much as usual, her legs seem to be warm down to the feet, which certainly would not be the case of a bad founder. She appears weak in the loins."

ANSWER:—Your statements are contradictory. As to the first mule, I advise you to examine the hock joint for spavins. An animal lame behind always limps worse when going up hill, and when lame in front shows it more when going down hill. As to the second mule, examine the feet; that is, the hoofs, because, notwithstanding your experience with founder, the action of the animal and the (unusual) warmth of the feet point toward the seat of the lameness in the hoofs, or toward laminitis.

EVERY farmer in the land should send and receive free, the pamphlets and rules for the New Potato Contest, advertised on page 241. Mention this paper.

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Smiles.

NO LONGER.

Shadows were dancing to and fro
On tapestried walk of the dim old hall;
Silence above and silence below,
As I strained my ear for my love's footfall.

A whirl of laces, the patter of feet,
And upon the landing a vision fair,
With a bound I hasten my love to greet,
And the firelight glints in her golden hair.

But grave and cold are my sweetheart's eyes;
The small, red mouth no smiles unfold;
A shadow o'er her whole face lies.
My heart with fear grows faint and cold.

"Pardon the pain I give to you;
Your faithful love I now give back.
If I have erred, now I'll be true—
I do not want you longer, Jack."

My heart stood still as her low voice ceased,
And she said, with lips now grown unsteady,
And eyes brimmed o'er with fun released,
"Because you're long enough already!"

—N. L. S., in New York Herald.

BURDETTE'S SERMON ON LIFE.

MAN born of woman is of few days and no teeth, and, indeed, it would be money in his pocket sometimes if he had less of either. As for his teeth, he had convulsions when he cut them, and as the last one comes through, lo! the dentist is twisting the first one out, and the last end of that man's jaw is worse than the first, being full of porcelain and a roof-plate built to hold blackberry seeds. Stone-bruises line his pathway to manhood; his father boxes his ears at home, the big boys cuff him in the play-ground and the teacher whips him in the school-room. He bonyeth North-western at 1.10, when he hath sold short at ninety-six, and his neighbors unloadeth upon him Iron Mountain at sixty-three and five eighths, and it straightway breaketh down to fifty-two and one fourth. He riseth early and sitteth up late that he may fill his barns and store-houses, and lo! his children's lawyers divide the spoils among themselves and say: "Ha, ha!" He groweth and is sore distressed because it raineth, and he beateth upon his breast and sayeth, "My crop is lost!" because it raineth not. The late rains blight his wheat and the frost biteth his peaches. If it be so that the sun shineth, even among the nineties, he sayeth, "Woe is me, for I perish!" and if the north-west wind sigheth down in forty-two below, he crieth, "Would I were dead!" If he wears sackcloth and blue jean, men say, "He is a tramp," and if he goeth forth shaven and clad in purple and fine linen, all the people cry, "Shoot the dude!" He carrieth insurance for twenty-five years, until he hath paid thrice for all his goods, and then he letteth his policy lapse one day, and that same night fire destroyeth his store. He buildeth him a house in Jersey and his first-born is devoured by mosquitoes; he pitcheth his tents in New York, and tramps devour his substance. He moveth to Kansas, and a cyclone carryeth his house over into Missouri, while a prairie fire and 10,000,000 acres of grasshoppers fight for his crop. He setteth himself in Kentucky, and is shot the next day by a gentleman, a colonel and a statesman, "because, sah, he resembles, sah, a man, sah, he did not like, sah."

Verily, there is no rest for the sole of his feet, and if he had to do it over again he would not be born at all, for "the day of death is better than the day of one's birth."

A SPECULATION.

Father—"I hope you are doing well in the financial world, my son?"
Son—"Yes, father; I made \$3,000 last year, but if I have good luck this year I shall make a cool \$50,000."
Father—"You have great business ability, Jack. Is it a legitimate speculation?"
Son—"Oh, yes; Miss Hendricks is going to answer me to-night."—Judge.

HIGH TIME INDEED.

A dog on exhibition at the New York bench show is valued at \$6,000, and belongs jointly to two gentlemen of that city. When dogs get to be so valuable that it takes two men to own one, it is about time to propound Socrates' celebrated conundrum: "Whither are we drifting?"—Norristown Herald.

FEARFUL!

"Awful accident at the museum."
"What was it?"
"The wild dog from Borneo got loose last night and ate up three quarters of the ossified man while he slept."
"Does the ossified man know it?"
"No; they're afraid to tell him."—Life.

SHOULD HAVE HAD A MEDAL.

"Fido ate the canary yesterday."
"Ate the canary! What did you do to him?"
"We gave him some pepsin, poor thing! You know he isn't used to such strong diet."

A MODEST MAN.

A thin, careworn-looking man, having a pencil and tablet in his hand, called at a house on Second avenue the other day, says the Detroit Free Press, and said to the lady as she opened the door:
"Madam, I am canvassing for subscriptions for a poor family. Will you put your name down for a small sum?"
"Is it a worthy family?"
"Yes, indeed."
"Do you know them personally?"
"I do, ma'am."
"And are they really in need?"
"They certainly are."
"Very well—I'll give you a quarter."
She put her name down and handed him the money, and he had reached the gate when she called him back and said:
"It has just occurred to me that this might be your own family!"
"Exactly, ma'am. It is my family, but modesty forbade me to say so. I am not one who seeks to push himself forward, though I would doubtless get along better if I was. Thank you, ma'am. I know the family, and I assure you it is all right—all right!"

HE WAS A STRANGER.

"Here's yer nice, hot lunches. Fri' chicken 'n' biscuits, fresh an' hot!" cried the well-known darkey lunch vender, as the train stopped at Salt Springs.
"Is the chicken tender?" queried a portly gentleman, as he poked his head out at the window.
"Yassah. Young 'n' tender, an' des es sweet an' fat."
"Where do you get your chickens?"
"See here, boss, wha you fum?" asked the old darkey, staring hard at the stranger.
"I'm from Michigan."
"T'ought you was strange in dese dliggins."
"Why did you think so?"
"Ca'se, boss, er w'ite gentleman w'at b'en borned down souf here niver axes er cullud person wey dey git dey chickens."—Atlanta Constitution.

A BAD CASE.

Backward, turn backward, O time in your flight. Give me the nose that I breathed through last night! Bring back the smeller that two days ago, Knew not the torment of continual blow. Wipe from my mustache the moisture of sueeze, Put wooden splints on my poor, weakened knees, Rub my red nose as you have before, With tallow, dear mother, oh, it is so sore. Backward, flow backward, O tide of the nose, I am so tired from my head to my toes; Tired out with mopping and coughing and sneezing; Wary from handkerchiefs constantly seizing; I have grown weary of snifle and snuff, Of wiping my bugle until it is rough. Stick my head in a big pillow-slip, And sew it up, mother, I have "la grippe."—Atchison Globe.

AT A BOARDING-HOUSE TABLE.

"How are you, Butter? How do you feel to-night?"
"Oh, I am just as strong as possible. How are you, Mr. Coffee?"
"Me! Well, to speak the truth, I feel very weak. I don't feel settled, and the grounds upon which I am admitted into society don't suit me at all. How are you, Miss Milk?"
"Oh, I feel very blue. I fell in the water this morning and came near being drowned; but don't chalk that up against me, and if you see a cow anywhere around I'd lactometer."
Then the steak yelled out, "Bully," and the mutton said, "Go-at while you are young," while the boiled eggs fairly cackled in derision.—Florida Times Union.

LURING HIM ON.

Servant (at sweet girl's boudoir)—"Mr. Nice-fellow is in the parlor, miss."
Sweet girl (throwing down a novel)—"Horrors! And my hair is all down! Tell him he'll have to wait a little as I'm in the kitchen helping mother."

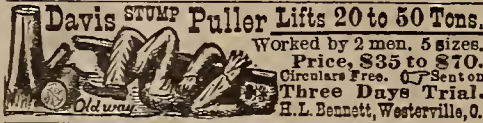
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Recent Publications.

PROCEEDINGS of the nineteenth annual meeting of the Kansas state board of agriculture, held at Topeka, Kan. M. Mohler, secretary, Topeka, Kan.

BUTTER AND CHEESE MAKING. A useful little pamphlet describing good methods of butter and cheese making and advertising Hansen's celebrated dairy preparations. Free. D. H. Roe & Co., 54 to 60 N. Clinton street, Chicago, Ill.

TWELFTH VOLUME OF THE CLYDESDALE STUD-BOOK. Containing pedigrees of mares having produce previous to September 30, 1889, and stallions foaled before January 1, 1889, and a list of members of the Clydesdale Horse Society. Arch'd McNeillage, secretary, 46 Gordon street, Glasgow, Scotland.

FOURTH AND FIFTH ANNUAL REPORTS of the Bureau of Animal Industry. Containing investigations of cattle, sheep and swine, papers on the meat and dairy industries of the United States, and papers accompanying the exhibit of the bureau at the Paris exposition of 1889. From the Department of Agriculture, Washington, D. C.

CATALOGUES RECEIVED.

Spring Price List. Oakland Nursery Co., Forgy, Ohio.

Howe's Potato Manual. G. D. Howe, North Hadley, Mass.

Annual Price List. Pike County Nurseries, Louisiana, Mo.

Catalogue of plants for the spring of 1890. John Saul, Washington, D. C.

Illustrated catalogue of garden and flower seeds. W. C. Wait, Newburgh, N. Y.

Price list of the Everbearing strawberry. Seth Winquist, Russellville, Oregon.

Circular of the Stevens Spring Tooth Harrow. A. W. Stevens & Son, Auburn, N. Y.

Illustrated annual circular of threshers and engines. C. Aultman & Co., Canton, Ohio.

Spring catalogue of the Pleasant Valley Nurseries. John S. Collins, Moorestown, N. J.

Northern-grown garden and field seeds and seed potatoes. Delano Moore, Presque Isle, Me.

Manual of thoroughbred live-stock and fancy poultry. W. Atlee Burpee & Co., Philadelphia, Pa.

Descriptive catalogue of grape vines and small fruits. T. S. Hubbard Co., Fredonia, N. Y.

Descriptive circular of Silver binder twine. Planet Mills, 83 Leouard street, New York City.

Descriptive catalogue of wild flowers, shrubs, trees and vines. Southwick Nurseries, Southwick, Mass.

Gladiolus, lilies, amaryllis and other spring bulbs, etc. Jas. M. Thorburn & Co., 15 John street, New York.

Illustrated descriptive catalogue of the Elkhart Carriage and Harness Manufacturing Co., Elkhart, Ind.

Catalogue of American grape vines and price list of small fruit plants. George S. Joselyn, Fredonia, N. Y.

Special catalogue of the best fruit and ornamental trees, shrubs, roses, perennial plants, etc. Fred W. Kelsey, 208 Broadway, New York.

Illustrated catalogue of a full line of dairy supplies, containing plau of model creamery. A. H. Reid, Thirtieth and Market streets, Philadelphia, Pa.

Price list of garden and flower seeds. Fred P. Burr & Co., Middletown, Conn. Among the premiums offered for early crops are \$5 cash for the first bushel of Early Sunrise potatoes delivered at their store, and a year's subscription to the FARM AND FIRESIDE for the second bushel shown to them, grown from seed purchased from them.

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Contains three alphabets of rubber type, type holder, bottle indelible ink, ink pad and tweezers; put up in neat box, with full directions for use. Satisfaction guaranteed. Eagle Supply Co., New Haven, Ct.

10 CENTS (silver) pays for your address in the "AGENT'S DIRECTORY," which goes whirling all over the United States, and you will get hundreds of samples, circulars, books, newspapers, magazines, etc., from those who want agents. You will get lots of good reading free and will be WELL PLEASED with the small investment. List containing name sent to each person answering. T. D. CAMPBELL, B 43, Boyleston, Ind.

AGENTS LOOK HERE

and Farmers with no experience make \$2.50 an hour during spare time. A. D. BATES, 164 W. Robbins Ave., Covington, Ky., made \$21 one day. \$31 one week. So can you. Proofs and catalogue free. J. E. SHEPARD & CO., Cincinnati, O.

Write to FRANKLIN PUTNAM, 485 Canal St., N. Y.

HE IS THE MAN

who STARTS MEN and Women in Practical Photography to earn money at home. Start Right! Don't fool away money on "Dummy" apparatus. But small means and no experience required. It will PAY YOU.



OUR NEW \$15 Solid Gold Watch worth \$40. Best \$15 Watch in the world. Perfect timekeeper. Warranted heavy, solid gold hunting cases. Both ladies' and gent's sizes, with works and cases of equal value. One person in each locality can secure one Free. Cut This Out and return to us with TEN CENTS in silver, and you will get by return mail A GOLDEN BOX OF GOODS that will bring you a more money in one month than anything else in America. Absolutely certain. Either sex. No capital. This is a no humbug. Satisfaction guaranteed or money refunded. Just think of it! Show this to friends, and we will send THREE of these Golden Boxes of Goods for 25 CENTS. Our Great Premium Offer. We will send by express absolutely Free one of our Watches as illustrated above to each of the first 100 persons answering this advertisement, also our illustrated catalogue of watches. We propose to give away these watches simply to advertise our business. W. S. SIMPSON, Box 2574, N. Y.

GREAT EXCITEMENT!

Jennie's Joy at BARGAIN Ann's New York

FREE LOOK AT THE ELEGANT PATTERNS



GET the Big Combination Lot. Yards and Yards of Real Silk and Satin Ribbons, Hamburg Insertions, Edgings, etc., and genuine valuable and variable Spanish, Maltese, Trochan, Cream, Arno, and Irish Laces, the most wonderful and largest assorted collection ever dreamed of, all beautiful in design, for ladies' immediate use, or of untold value to lay aside or sell part to neighbors, at ten times the cost of all you. The 17 to 22 yards hand-some, bright, fast-colored Dress and Underwear Trimmings, Hat, Bonnet, or Dress Ties, Stripes Embroidery, Decorations, Ribbons, etc., make ladies wild with delight. Goods all best grade and late style, different length remnants, 3 feet to 6 or 8 yards long, 17 to 29 yards in all, retailing from 10 to 30 cents a yard. \$3 to \$5 would be low retail value, but bought for 8 cents on dollar, at very large metropolitan closing out wholesale auction trade sale.

We can send three times as much as any firm ever advertised to before. Remember, Hamburgs, Ribbons, and Laces altogether, not a little box of either one, but a Big Lot of All. We same as give these Big Lots away, to advertise our large line of other Fancy Goods we have dealt in 10 years, and to introduce our new magazine, "Comfort." This beautiful 67-cent monthly, with picturesque title page, illustrating twenty-five ways of taking Solid Comfort, contains beautiful pictures, stories in poetry and prose, home, farm, fancy, and funny sketches, etc., will be sent FREE to get your influence, as we want 200,000 new subscribers at once. If you want to have Jennie's Joy, send names and addresses of five ladies you think want Comfort in the family, and we pay all postage and packing expense, sending Comfort six months free, if you enclose 15 cents for same to

COMFORT PUBLISHING CO., BOX 1325, Augusta, Me.

Mention this paper.



TAKE AN AGENCY for the Best Utensil in the universe. DAGGETT'S SELF-BASTING PAN. Needed in every family. SAVES 20 Per Cent. in Roasting, and Bakes the Best Bread in the world. Address for terms

W. A. DAGGETT & CO., Vineland, N. J. or Western Office, 184 E. Indiana St., Chicago.

A PRESENT.

SEND us your address and we will make you a present of the best Automatic WASHING MACHINE in the world. No wash-board or rubbing needed. We want you to show it to your friends, and act as agent if you can. You can COME MONEY. We also give a HANDSOME WATCH to the first from each county. Write quick. Address N. Y. LAUNDRY WORKS, 25 Dey St., N. Y.

CANCER and Tumors CURED: no knife: book free. Drs. GRATIGNY & BUSH, No. 163 Elm St., Cincinnati, O.

OPIUM Morphine Habit Cured in 10 to 20 days. No pay till cured. Dr. J. Stephens, Lebanon, Ohio.

ASTHMA—CURED never fails; send us your address, we will mail trial. DR. TAFT BROS., ROCHESTER, N. Y. FREE

OPIUM & HABITS CURED At home. No pain or nervous shock. Small expense. The LESLIE E. KEELEY CO., Dwight, Ill.

PILES. Instant relief. Final cure in 10 days and never returns. No surgery, no salve, no suppository. A simple remedy mailed FREE. Address, TUTTLE & CO., 78 Nassau Street, New York City.

DEAFNESS & HEAD NOISES CURED by Peck's INVISIBLE TUBULAR EAR CUSHIONS. Whispers heard. Comfortable. Successful where all Remedies FAIL. Ills. book & proofs free. Address F. HISCOX, 865 Broadway, New York.

WIVES Should know how child bearing can be effected without PAIN or DANGER and cure their ills. Send for sealed information. A wonderful discovery. DR. J. H. DYE, Buffalo, N. Y.

HAIR REMOVED Permanently, root and branch, in five minutes, without pain, discoloration or injury with "Pilla Solveme." Sealed particulars, 6c. Wilcox Specific Co., Phila., Pa.

RUPTURES CURED by my Medical Compound and Improved Elastic Supporter Truss in from 30 to 90 days. Reliable references given. Send stamp for circular, and say in what paper you saw my advertisement. Address Capt. W. A. COLLINGS, Smithville, Jefferson Co. N. Y.

I CURE FITS!

When I say cure I do not mean merely to stop them for a time and then have them return again. I mean a radical cure. I have made the disease of FITS, EPILEPSY or FALLING SICKNESS a life-long study. I warrant my remedy to cure the worst cases. Because others have failed is no reason for not now receiving a cure. Send at once for a treatise and a Free Bottle of my infallible remedy. Give Express and Post Office. H. G. ROOT, M. C., 183 Pearl St. New York.

DROPSY TREATED FREE. Positively Cured with Have cured many thousand cases. Cure patients pronounced hopelessly by the best physicians. From first dose symptoms rapidly disappear, and in ten days at least two-thirds of all symptoms are removed. Send for FREE BOOK of testimonials of mir- TEN DAYS treatment FREE by mail. If acutous cures, send ten cents in stamps to pay postage. DR. H. H. GREEN & SONS, ATLANTA, GA.

If afflicted with sore eyes use Dr. Thompson's Eye-Water

Mention this paper when answering advertisements

The Markets.

		CHICAGO.	NEW YORK.	N. OALE'S
BUTTER.				
Fancy Cream'ry...	24 @ 25	26 @ 27	25 @ 28	
" Dairy.....	17 @ 21	23 @ 24	17 @ 13	
Common.....	5 @ 7	5 @ 12		
GRAIN.				
Wheat No. 2 spr'g	79%			
" No. 2 w't'r	79%			
Corn.....	27 1/4 @ 29 1/2	36 @ 38	33 @ 42	
Oats.....	21 @ 24	28 @ 30	31	
LIVE STOCK.				
Cattle, Extra.....	5 00 @ 5 25	5 00		
" Shippers.....	3 20 @ 4 90	3 90 @ 4 90	3 00 @ 3 50	
" Stockers.....	2 40 @ 3 70			
Hogs, Heavy.....	4 25 @ 4 35	4 20 @ 4 70	3 50 @ 4 75	
" Light.....	4 20 @ 4 30			
Sheep, com. to good	5 50 @ 6 50	5 00 @ 6 50	2 00 @ 3 90	
" Lambs.....	6 75 @ 7 40	6 50 @ 7 75		
PROVISIONS.				
Lard.....	6 15	6 20	5 37 1/2	
Mess Pork.....	10 50	10 45	11 25	
SEEDS.				
Flax, No. 1.....	1 45			
Timothy.....	1 15 @ 1 25			
Clover.....	3 25 @ 3 30			
WOOL.				
Fine, Ohio & Pa.		30 @ 34 1/2		
" Western.....		29 @ 30		
" Unwashed.....	17 @ 21			
Medium, Ohio & Pa.				
" Western.....				
" Unwashed.....	23 @ 26			
Combing & Delaine		35 @ 41		
Coarse & Black.....	19 @ 21			

FARMERS

Saw and Grist Mill. 4 H.P. and larger. Catalogue free. DeLoach Mill Co., Atlanta, Ga.

THE ORANGE VALLEY CART
Hanging on four Oil-tempered Steel Spiral Springs. The Easiest to Ride on Two Wheels. Comfortable and Roomy. FULLY WARRANTED. Just the Cart for the Farmer. Circulars LIPPELMANN CARTRIDGE CO., CHICAGO, ILL.

WE LEAD Where Others Follow.
Beyond a question we have the best line of CARTS made for the Horseman, Farmer, or for business or pleasure purposes. Send stamp for Catalogue and wholesale prices. A. L. PRAET & CO., 76 to 86 Willard St., Kalamazoo, Mich.

New VINEYARD BICYCLES
All Steel, rubber tire. High grade, cowhorn bars, spade handles, Kirkpatrick saddle. Warranted one year. 60-in. worth \$55, for \$32 1/2; 44-in. worth \$40, for \$22 1/2; 48-in. worth \$50, for \$37 1/2; 42-in. worth \$35, for \$20 1/2. CATA. FREE. 45-in. worth \$45, for \$35 1/2; 40-in. worth \$30, for \$17 1/2. Tangent spokes extra. Easy payments. Agts. wanted Rouse, Hazard & Co., 32 G St., Peoria, Ill.

FENCE PRICES REDUCED
Heavy Netting. Best made. (STEEL WIRE.) Catalogue FREE. Write SEDGWICK BROS., RICHMOND, IND. EDWARD SUTTON, Eastern Agent, 300 MARKET STREET, PHILADELPHIA, PA.

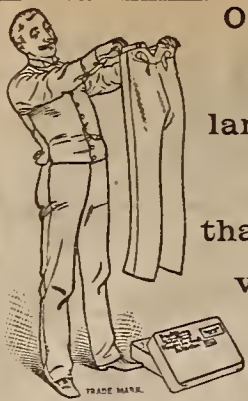
MOSELEY'S OCCIDENT CREAMERY.
SOLD ON MERIT. Send for Special Introductory Offer. Freight Paid by us. MOSELEY & PRITCHARD MANUFACTURING CO., Clinton, Iowa.

DEDERICK'S HAY PRESSES.
Made of steel, lighter, stronger, cheaper, more power, everlasting and competition distanced. For proof order on trial, to keep the best and get any other alongside if you can. Reversible Full Circle Belt Presses, all sizes. Address for circulars and location of Storehouses and Agents, No. 24 Dederick's Works. ALBANY, N.Y. Mention this paper.

Buckeye Wrought Iron Punched Rail Fence.
Also, manufacturers of Iron Cresting, Iron Turbine Wind Engines, Buckeye Force Pumps, Buckeye Lawn Mowers, etc. Send for Illustrated Catalogue and prices to Mast, Foss & Co. Springfield, O.

"Acme Bail" CHURNS
AND "Boss" CHURNS
Make more butter, better butter, churn easier and clean easier than any other churns. The "ACME" Washer is warranted to wash collars and vests clean. Special terms to introduce. H. H. PALMER & CO., 40 & 42 Arch St., Rockford, Ill.

ROAD CARTS ONLY \$10
The Best and Lowest Price of any Carts Made. \$15, \$18, \$20 and \$25. Top Buggies, only \$55.00. Harness \$7.50 and \$10.00. Forges, Anvils, Vices, Saws, Sewing Machines, Scales of all varieties. Save money and send for Price List. CHICAGO SCALE CO., Chicago, Illinois, U. S. A. Say you saw this in Farm and Fireside.



Our business showed a larger increase in 1889, than for 18 previous years.

WHY?

HERE'S A FEW REASONS!

- (1) Very popular patterns of cloth. Styles shown only by us.
- (2) Improved system of cutting, customer picking out his own shape from 10 examples, in addition to sending measures.
- (3) 52 patterns, cut from cloth itself, to select from. Every garment guaranteed in all points—money promptly refunded for any cause.
- (4) Entire outfit as shown above, sent FREE upon application, post-paid.
- (5) Increase of our branch stores as far South as New Orleans, and West to Chicago, successfully competing for fine city trade.
- (6) Thousands of people telling each other of our honorable treatment of customers, and excellent wear and fit of our clothing.

The promise for 1890 is very bright. We shall strive hard to deserve it.

PLYMOUTH ROCK PANTS CO.

Address all mail to Headquarters, 11 to 17 Eliot St. Annex, 695 Washington St., and 18 Summer St., Boston, Mass.

Branches: 285 Broadway, New York; 943 Penn. Ave., Washington, D.C.; 72 Adams St., Chicago, Ill.; 914 Main St., Richmond, Va.; 1225 E. Baltimore St., Baltimore, Md.; 110 Canal St., New Orleans, La.; 104 Montgomery St., Montgomery, Ala.; 39 Whitehall St., Atlanta, Ga.; Burnside Bldg., Worcester, Mass.; Hotel Gilmore, Springfield, Mass.; 198 Westminster St., Providence, R.I.; Old Register Bldg., New Haven, Conn.; 106 N. Main St., Concord, N.H.; 170 River St., Troy, N.Y.

PRACTICAL HINTS TO BUILDERS.
A LITTLE BOOK of 100 pages, containing solid facts that every man contemplating BUILDING should know before letting his contracts. Improved Edition, 1890. Chapters on the kitchen chimney, stairs, foundation, brickwork, mortar, cellar, heating, ventilation, the roof and many items of interest to builders. Mailed free on receipt of 10c. in postage stamps. Address NATIONAL SHEET METAL ROOFING CO., 516 East 20th St., New York City. This advertisement appears every other week.

Ohio Improved Chesters
WARRANTED CHOLERA PROOF. EXPRESS PREPAID. WINS 1ST PRIZES IN U. S. & FOREIGN CONTESTS. 2 WEIGHED 2806 LBS. SEND FOR DESCRIPTION & PRICE OF THESE FAMOUS HOOS, ALSO FOWLS L. B. SILVER CO. CLEVELAND, O. (This Company sold 973 head for breeding purposes in 1887. Send for facts and mention this paper.)

Established 1852 **JACKSON BROTHERS,** New York State Drain-Tile and Pipe Works, Main Office, 99 Third Ave., Albany, N. Y.

ROUND TILE
ROUND, SOLE AND HORSE-SHOE TILE. Over 13 inches long. By Cargo or Smallest Quantity. PRICE LIST ON APPLICATION. Prices that cannot be underquoted. Our New Improved Machinery makes a SUPERIOR ROUND TILE, exceeding ANYTHING offered before and at GREATLY REDUCED PRICES. First Premium wherever exhibited. Also, wholesale agents for the CELEBRATED ALBION ENAMELED SEWER-PIPE. Prices Low for Small or Large Orders.

Pennsylvania Agricultural Works, York, Pa.
Farquhar's Standard Engines and Saw Mills. Send for Catalogue. Portable, Stationary, Traction and Automatic Engines a specialty. Warranted equal to any made. Address A. B. FARQUHAR & SON, York, Pa.

A SOLID STEEL FENCE!
This is Not Wire
MADE OF
EXPANDED METAL
CUT FROM STEEL PLATES. SOMETHING NEW. FOR RESIDENCES, CHURCHES, CEMETERIES, FARMS, GARDENS, Gates, Arbors, Window Guards, Trellises, Fire-proof PLASTERING LATH, DOOR MATS, &c. Write for Illustrated Catalogue; mailed free. CENTRAL EXPANDED METAL CO., 116 Water St., Pittsburgh, Pa. Hardware Men keep it. Give name of this paper

STAR SEEDER.
Adapted to any Common Farm Wagon. Distributes the seed equally whether team walks fast or slow. Sows all kinds of grain, seeds and fertilizers and any quantity per acre desired. Not affected by the wind. 80 to 100 acres per day. Our Seeder has all the latest improvements and is a perfect seeder in every respect. Send for circular, prices, &c., to STAR MANFG. CO., New Lexington, Ohio.

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Adapted to any Common Farm Wagon. Distributes the seed equally whether team walks fast or slow. Sows all kinds of grain, seeds and fertilizers and any quantity per acre desired. Not affected by the wind. 80 to 100 acres per day. Our Seeder has all the latest improvements and is a perfect seeder in every respect. Send for circular, prices, &c., to STAR MANFG. CO., New Lexington, Ohio.



THE HOUSEWIFE

4 MONTHS FOR ONLY ONE DIME

IF YOU MENTION FARM AND FIRESIDE.

The April Housewife.

With the April issue THE HOUSEWIFE completes its fifth year under most favorable auspices. To celebrate the happy event an unusually choice number has been prepared. "MRS. MABEL'S NEIGHBOR," by Mary A. Denison; "THE DEBUTANTE'S HEIRESS," by Mary Kyle Dallas; and the closing chapter of "THE OLD HOUSE IN THE HOLLOW," by Mary Lowe Dickinson, story lovers will find delightful reading.

Emma Moffett Tyng will furnish an interesting article for the housewives who delight in "TABLE CHINA." "Jenny June" will plead for way "SPRING TRIMMINGS," "NETS WE WEAR NOW." Every one planning to devote R. Knapp has to say concerning "BITS OF EXPERIENCE AND OBSERVATION." In "HOUSECLEANING MADE EASY," Eunice Carew will show how that dreaded ordeal may be robbed of half its terrors.

Maria Parloa will teach "HOW TO CAN RHUBARB," in an excellent and simple way. Juliet Corson will furnish a second chapter on the making of "SOUPS." There will be suggestions for the making of "EASTER SOUVENIRS," antique and novel. THE NEEDLE-WORKER, by Emma C. Monroe, and THE CHAT-BOX, by Agnes C. Stoddard, will be, as usual, brimful of good things. Poems by Dora Read Goodale, Alice Ward Bailey, Eben E. Rexford, and others, with a story for the children, will complete the number.

THE HOUSEWIFE Is the Best Illustrated Monthly in the World for 50 cents a Year. TO INTRODUCE IT INTO THOUSANDS OF NEW HOMES WE OFFER

THE HOUSEWIFE, FOUR MONTHS, on trial, for ONLY 10 CENTS, IF YOU MENTION FARM AND FIRESIDE, THE HOUSEWIFE PUBLISHING CO., New-York, N. Y.

ENTERPRISE MEAT CHOPPERS, BEST IN THE WORLD. GUARANTEED TO CHOP, NOT GRIND THE MEAT.

FOR CHOPPING Sausage Meat, Mince Meat, Hamburg Steak for Dyspeptics, Beef Tea for Invalids, &c.

Farm and Fireside says: "It is the only Meat Chopper we ever saw that we would give house room. It has proven such a very useful machine that we want our readers to enjoy its benefits with us."

CHOPS AS SHOWN.

No 10 Chops 2 lbs. per minute Price, \$3.00.
12 Chops 2 lbs. per minute Price, \$2.50.
22 Chops 3 lbs. per minute Price, \$4.00.
32 Chops 4 lbs. per minute Price, \$6.00.

American Agriculturist says: "We have given this Meat Chopper a thorough trial with most satisfactory results. They excel anything of the kind made in either hemisphere."

ENTERPRISE SAUSAGE STUFFER and LARD PRESS.

The Easiest Working and Most Durable Machines in the Market. Are Unexcelled for Butchers' and Farmers' Use in Stuffing Sausages and will be found useful for Pressing FRUIT and many other purposes.

Our Choppers and Stuffers are Sold by the Hardware Trade. If you cannot get a CHOPPER or STUFFER from your Hardware Dealer, send money to us and we will ship by first fast train.

3 SIZES.
No. 15—2 qts. \$3.00
25—4 " 5.00
35—8 " 6.00

SEND FOR Catalogue, Free

Enterprise M'f'g Co., Philadelphia.

NEW BUCKEYE SUNBEAM CULTIVATOR

Manufactured by P. P. MAST & CO. SPRINGFIELD, O.

ESTABLISHED 1854. With PIVOTED PARALLEL BEAMS. With METAL WHEELS and SPRINGS at Ends of Beams.

This Cultivator has the rear ends of the beams pivoted to a Cross-head to which the beam or rod pivoted to the coupling in front and to the Cross-head in the rear, by which the Shovels are carried parallel with the axle, whatever may be the position of them in being moved sideways. The spring at the front end of the beams supports them when in use, and enables the operator to move them easily from side to side and assists in raising when he wishes to hook them up while turning at the end of the row. We attach these beams also to our Riding and Tongueless Cultivators. This Cultivator has no equal in the market, and can not fail to be appreciated by any farmer who sees it. We also manufacture the BUCKEYE DRILL, BUCKEYE SEEDER, BUCKEYE CIDER MILLS and HAY RAKES.

Branch Houses:—Philadelphia, Pa.; Peoria, Ill.; St. Paul, Minn.; Kansas City, Mo.; and San Francisco, Cal. Write for Circular to either of the above firms or to P. P. MAST & CO. SPRINGFIELD, OHIO.

Always mention this paper when answering advertisements.



EASTERN EDITION.

VOL. XIII. NO. 15.

PHILADELPHIA, PA., and SPRINGFIELD, OHIO, MAY 1, 1890.

TERMS (30 CENTS A YEAR.
24 NUMBERS.)

The Circulation of FARM AND FIRESIDE
this issue is

250,700 COPIES.

The Average Circulation for the 24 issues of
the year 1889, was

240,650 COPIES EACH ISSUE.

To accommodate advertisers, two editions
are printed. The Eastern edition being
100,000 copies, the Western edition
being 150,400 copies this issue.

Farm and Fireside has the Largest Circulation
of any Agricultural Journal in the World.

Current Comment.

BULLETIN No. 26, Division of Chemis-
try, U. S. Department of Agricult-
ure, contains a record of experi-
ments in the production of sugar from
sorghum in 1889 at the factories in Iowa,
New Jersey, Virginia, Louisiana and
Kansas. This bulletin should be in the
hands of every one who intends investing
in the sorghum sugar industry.

It is specially valuable because it points
out clearly the causes of the failures that
have occurred. Some of the factories have
been erected where the soil and climate
are unfavorable, and the industry can
never be profitable. Some factories failed
on account of bad business management,
poor machinery, lack of sufficient water,
or various other causes, all of which could
and should have been avoided. One of
the greatest mistakes was the location of
factories where a sufficient supply of
water could not be obtained.

Prof. Wiley says that, though intend-
ing builders were warned in a former bul-
letin against the danger of undertaking
work in the manufacture of sugar from
sorghum without an abundance of good
water, he found only one factory in Kan-
sas with a sufficient supply of water.

Experiments have demonstrated that
sorghum sugar can be produced profitably
in certain portions of the country, but
they have also shown that the area of
profitable production is limited, and much
smaller than formerly supposed. The fail-
ures within this area due to avoidable
causes have had a depressing effect on the
industry.

THE sugar industry is one of national
importance, and it is a wise policy for
the government to give it proper
encouragement. It is not wise policy to
import nearly a hundred million dollars'
worth of what we can produce at home.

We have faith that the time will come
when this country will produce all the
sugar it consumes. Only a small part of
the lands in Louisiana and Florida
adapted to the profitable production of
sugar cane is now under cultivation for
that purpose. The area of the cane fields
is increasing. But we need not depend on
cane alone. It is not generally known
that more sugar is made from beets than
cane. Now, let as much be done for the
beet as has been done for sorghum, and it
is probable that the beet sugar industry
will be firmly established in this country.
In fact, Spreckles has already demon-
strated that the business is a profitable
one for farmer and manufacturer in Cali-
fornia. This year will witness an ex-
periment on a grand scale at Grand

Island, Nebraska. A \$500,000 beet sugar
plant is now being completed and stocked
with sixty car-loads of machinery recently
imported from Germany.

Experiments extending over several
years have shown that the soil and cli-
mate there are adapted to the culture of
beets for sugar.

Repeated analysis has shown the beets
grown there to be richer than those grown
in Europe. The company are also im-
porting for distribution fifty tons of beet
sugar seed. The establishment of the beet
sugar industry would be a boon for west-
ern farmers.

The prevailing low prices of farm prod-
ucts, consequent on continued overpro-
duction, will force the farmers of this
country to diversify their industries, and
just as soon as sugar beet culture is de-
monstrated to be safe, they will engage in
it. An enlargement of the sugar industry
in this country will result in cheapening
the price of sugar, and the whole popula-
tion will be benefited by it.

THE following is taken from the re-
port of the majority of the ways
and means committee on the new
tariff bill:

The committee recommend that sugar, up to
and including No. 16 Dutch standard of color,
and molasses, be placed on the free list, with
a duty of four tenths of one cent per pound
on refined sugar above No. 16, and that a
bounty of two cents per pound be paid from
the treasury for a period of fifteen years for all
sugar polarizing at least 85 per cent, made in
this country from cane, beets or sorghum pro-
duced in the United States.

In 1888 the consumption of sugar in the
United States was 1,469,997 tons, or 53.1 pounds
per inhabitant. Of this only 189,814 tons were
produced in the United States, and 1,280,183
tons, or seven eighths of our consumption,
were imported. So large a proportion of our
sugar is imported that the home produc-
tion of sugar does not materially affect the
price, and the duty is therefore a tax, which is
added not only to the price of the imported,
but of the domestic product, which is not true
here substantially to the extent of our wants.
In 1889 the duties collected on imported sugar
and molasses amounted to \$55,975,610. Add to
this the increase of price of domestic sugar
arising from the duty, and it is clear that the
duty on sugar and molasses made the cost of
the sugar and molasses consumed by the
people of this country at least \$64,000,000, or
about one dollar for each man, woman and
child in the United States, more than it would
have been if no such duties had been levied
and the domestic product had remained the
same.

Even on the assumption that with proper
encouragement we shall eventually be able to
produce all, or nearly all, the sugar required
for the consumption of our people, an assump-
tion which your committee believe to be sus-
tained by many facts, notwithstanding the
slow progress thus far made in sugar culture in
this country—this encouragement can be given
much more economically and effectually by a
bounty of two cents per pound, involving the
expenditure of but a little more than \$7,000,000
per annum, with the present production of
sugar in this country, than by the imposition
of a duty, involving the collection of \$55,975-
610 in duties in the last fiscal year, not to men-
tion the amount indirectly involved.

When it is considered that this increase in
cost due to the duty falls on an article of prime
necessity as food, your committee are per-
suaded that justice, as well as good policy,
requires that such an unnecessary burden in
the way of a direct tax should be removed
from sugar, and that the encouragement re-

quired to induce the production of sugar in
the United States should be given through a
bounty, rather than by an import duty.

In providing that not only raw sugar, but
also sugar up to and including No. 16, shall be
admitted free of duty, an opportunity is given
for the free introduction of yellow sugars
suited for family use—an arrangement which
will secure to our people sugar at the lowest
price existing in the markets of the world,
while even imported, white, refined sugar will
be subject to a duty of only four tenths of one
cent per pound.

THE Forum for April contains a very
instructive article on agricultural
depression. Tables, showing the
statistics of the staple farm products, are
given, and the per cent increase compared
with the increase of population. The
writer clearly shows that the history of
American farming for twenty years is, in
brief, that as the area of cultivation has
increased, so has the product per capita,
to be followed by ever-declining prices
and diminishing returns per acre. For
example, during a period of thirty-nine
years, ending in 1889, the population in-
creased 175 per cent, and the production
of wheat increased 389 per cent. Since
1870, the annual product of wheat per
capita has increased from 6.43 to 7.24
bushels. In the same period, the average
value per acre has decreased from \$13.66 to
\$8.84—thirty-five per cent. The price of
wheat in our home market is governed by
the price in the foreign market. But, as
the price in Europe is governed by de-
mand and supply, it is the extent of the
American surplus that fixes the price of
wheat, after all.

Commenting on the facts presented,
bearing on agricultural depression, the
American Economist gives the following
summary:

The prime cause of low prices is the
operation of the inexorable law of supply
and demand.

Diversification is essential to agricul-
tural salvation.

Eliminate the surplus, and prices would
rise.

It is the extent and pressure of our sur-
plus which determines the price in
Europe.

The logical conclusion is that the trou-
bles of the farmer are due to the fact that
there is too great a production of nearly
all farm products for the number of con-
sumers.

THERE are two bills before congress,
the object of which is to exclude
from the mails as second-class mat-
ter a certain class of periodical publications
known as "libraries." Soon after these
"libraries" were introduced, the privilege
was granted the publishers of mailing
them at second-class rates. Since then the
publication of these periodicals has in-
creased enormously, and a vast amount of
money has been invested in the business.
The result has been to cheapen and popu-
larize good literature. The cost of good
literature has been reduced fully seventy-
five per cent in recent years, and much of
this is due to low rates of postage and the
growth of the library publication busi-
ness.

The legislation pending increases the
rate of postage on these publications from
one cent to eight cents a pound. Should

it pass, the public must pay the increased
postage or do without the periodicals. If
it should pass, it would injure the pub-
lishers by decreasing their sales. They
could no longer furnish these publications
at the present low prices, and any in-
crease in the prices now would restrict
their sales. The public and the publish-
ers would both be injured by this legisla-
tion. It would be a positive act of injus-
tice to the publishers to injure them by
special legislation, especially after having
encouraged them in their business for sev-
eral years. It is a backward step. The
people want lower postage, not higher. If
the government can afford to carry news-
papers at one cent a pound, it can carry
these periodical publications also. It
would be better to lower the postage on
other kinds of mail matter than to in-
crease it on this. This proposed legisla-
tion is unfair and unjust. It would, of
course, lighten the labors of some postal
clerks, but they ought to have enough
foresight to know that the greater the
postal business done the better the chance
for them. The proposed legislation would
benefit no one and injure many.

THERE is unreasonableness on both
sides in the discussion over placing
an internal revenue tax on the mix-
ture of lard and cotton-seed oil known as
compound lard. Some on one side want
cotton-seed oil taxed, because it is sold in
this way and used as a substitute for lard
and other animal fats, thus lowering the
price of the latter. Some on the other
side oppose the proposed tax because they
want the unrestricted privilege of adul-
terating lard, as they can get more for the
oil in this way than when sold under its
own name.

Refined cotton-seed oil may be clean,
pure, wholesome and suitable for culi-
nary purposes. As such it has as much
right to be placed on the market and sold
without restrictions as pure, clean lard.
Even when mixed with lard and the
mixture sold on its own merits as a com-
pound of lard and cotton-seed oil, without
any attempt to deceive the public as to its
true nature, a restrictive or prohibitive
tax is wrong. The people then know just
what they are buying, and if they prefer
to use the compound, they certainly should
have the privilege of doing so. But when
cotton-seed oil is mixed with lard and
the compound represented and sold as
pure lard, or the public deceived in any
way as to its true nature, then there is
adulteration and fraud, and a tax on the
article, or a fine on the dealers, is right
and proper. Even the confiscation of the
adulterated article by the government
would be right and proper. It makes no
difference if compound lard is clean and
wholesome, whenever the manufacturers
and dealers deceive the consumers as to
its real nature, they are deliberately de-
frauding them and should be punished.
Why do they not brand the mixture
"compound cotton-seed oil?" Because
they can sell it for a good deal more by
making the public believe it to be lard.

Some legislation to prevent consumers
from being defrauded is necessary, and
all that is necessary is that which will
compel the article to sold under its true
name.

FARM AND FIRESIDE.
ISSUED 1st AND 15th OF EACH MONTH BY
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are from reliable firms or business men, and do not
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from any but reliable parties; if subscribers find any
of them to be otherwise we should be glad to know it.
Always mention this paper when answering adver-
tisements, as advertisers often have different things
advertised in several papers.

AGRICULTURAL CHEMISTRY

From the Standpoint of the Practical Farmer.

BY JOSEPH (TUISCO GREINER).

No. 32.

GAS LIME.—The refuse lime of
the gas works has frequently
been spoken of in the agri-
cultural press, and at farmers'
meetings, both as a fertilizer
(or rather a stimulant) for the
soil, and as a repeller or destroyer of in-
jurious insects. In the desire to see clear
in this matter, I applied to the chemical
department of Cornell University for in-
formation, and on May 19th of last year
Prof. Caldwell replied as follows:

"Gas lime is composed chiefly of car-
bonate of lime and varying quantities of
sulphate of lime (or ordinary land plaster),
sulphite of lime, sulphide of calcium, and
more or less unchanged lime.

"The sulphite and sulphide are harmful
to vegetation, especially the latter; but on
exposure of the gas lime for a considera-
ble time to the air they become changed
to the useful sulphate. The carbonate is
of little value, and only the sulphate and
the unchanged lime can be counted on as
of any use.

"I do not consider the material as of
much value for fertilizing purposes; for
after due exposure to the air, to render
the sulphide and the sulphite harmless,
the unchanged lime will also, in this time,
be converted to carbonate, so that only
the sulphate is left to be useful; and if I
were going to use land plaster, I would
prefer to buy it outright and know what
I have.

"As an insecticide its use would be
dangerous, because of its effect on the
plant itself, unless it has been well aired,
and as for its usefulness in this respect
after having been thus aired, it would be
the same as a mixture of plaster and
chalk, which, as you know, would be of
small account.

"Some few farmers report good results
with gas lime as a fertilizer, but not
many; and others report the crops killed
to which it was applied."

This is the advice of an expert, and I
see no reason for adding anything to it.

TABLE OF ANALYSES.—Tables giving the
average composition of fertilizing ma-
terials, values of manures, as well as
formulas for compounding manures, will
undoubtedly come acceptable to many
readers, head off a great number of ques-
tions that would otherwise very likely be
referred to me for special reply, and alto-
gether serve as a fit conclusion to my
treatise on farm chemistry. I begin with
a table of analyses, giving an average of
analyses taken from the reports of experi-

ment stations and other sources, all of
which I consider entirely reliable. The
reader should save and preserve these
tables as a ready reference, considering
that it represents quite a good deal of
labor in compilation.

TABLE SHOWING COMPOSITION AND APPROX-
IMATE CHEMICAL VALUE OF VARIOUS
FERTILIZING MATERIALS.

1. APATITE (A MINERAL PHOSPHATE).
Total phosphoric acid (insoluble).....38.00 pr. ct.
Chemical value per ton, \$15.20.

2. BONE BLACK, DISSOLVED.
Phosphoric acid available.....16.65 pr. ct.
" insoluble..... 0.35 pr. ct.
" " total.....17.00 pr. ct.
Chemical value per ton, \$26.73.

3. BLOOD, DRIED.
Nitrogen.....9.50 pr. ct.
Phosphoric acid.....1.90 pr. ct.
Chemical value per ton, \$39.00.

4. BONE CHARCOAL.
Phosphoric acid available..... 5.00 pr. ct.
" insoluble.....20.00 pr. ct.
" " total.....25.00 pr. ct.
Chemical value per ton, \$——.

5. BONES, GROUND FINE.
Nitrogen.....3.90 pr. ct.
Phosphoric acid, mostly insoluble.....22.40 pr. ct.
Chemical value per ton, \$35.00.

6. COAL DUST.
Nitrogen.....1.85 pr. ct.
Phosphoric acid.....0.60 pr. ct.
Potash.....trace
Chemical value per ton, \$3.06 (?).

7. CASTOR POMACE.
Nitrogen.....5.35 pr. ct.
Phosphoric acid.....1.95 pr. ct.
Potash.....1.05 pr. ct.
Chemical value per ton, \$21.20.

8. COTTON-SEED MEAL.
Nitrogen.....6.10 pr. ct.
Phosphoric acid.....1.45 pr. ct.
Potash.....0.90 pr. ct.
Chemical value per ton, \$22.80.

9. COTTON-SEED HULL ASHES.
Phosphoric acid..... 8.40 pr. ct.
Potash.....22.10 pr. ct.
Chemical value per ton, \$36.60.

10. COW MANURE.
(This, like all other farm manures, varies
greatly, according to amount of litter used and
the manner of feeding the animals).
Nitrogen.....0.50 pr. ct.
Phosphoric acid.....0.25 pr. ct.
Potash.....0.45 pr. ct.
Chemical value per ton, \$2.00.

11. FISH, DRY GROUND.
Nitrogen.....6.80 pr. ct.
Phosphoric acid available.....4.00 pr. ct.
" insoluble.....4.10 pr. ct.
" " total.....8.10 pr. ct.
Chemical value per ton, \$37.90.

12. GUANO, ORDRILLO.
Phosphoric acid total.....26.75 pr. ct.
Chemical value per ton, \$31.50.

13. GUANO, PERUVIAN.
Nitrogen.....5.10 pr. ct.
Phosphoric acid.....18.45 pr. ct.
Potash.....3.45 pr. ct.
Chemical value per ton, \$45.50.

14. HEN MANURE, FRESH FROM HIGH-FED
FOWLS.
Nitrogen.....1.60 pr. ct.
Phosphoric acid.....1.50 pr. ct.
Potash.....0.80 pr. ct.
Chemical value per ton, \$7.40.

15. HOG MANURE.
(varies greatly).
Nitrogen.....0.60 pr. ct.
Phosphoric acid.....0.40 pr. ct.
Potash.....0.30 pr. ct.
Chemical value per ton, \$2.40.

16. HORN AND HOOF WASTE.
Nitrogen.....14.45 pr. ct.
Phosphoric acid..... 2.30 pr. ct.
Chemical value per ton, \$——.

17. HORSE MANURE.
(varies greatly).
Nitrogen.....0.60 pr. ct.
Phosphoric acid.....0.40 pr. ct.
Potash.....0.50 pr. ct.
Chemical value per ton, \$——.

18. KAINIT.
Potash.....13.50 pr. ct.
Chemical value, \$12.15.

19. LEAVES—DRY FOREST.
Nitrogen.....0.65 pr. ct.
Phosphoric acid.....0.20 pr. ct.
Potash.....0.40 pr. ct.
Chemical value per ton, \$2.55.

20. LINSEED MEAL.
Nitrogen.....5.25 pr. ct.
Phosphoric acid.....1.95 pr. ct.
Potash.....1.40 pr. ct.
Chemical value per ton, \$21.32.

21. MUCK (WET).
Nitrogen.....0.35 pr. ct.
Chemical value per ton, \$0.75.

22. MURIATE OF POTASH.
Potash.....51.50 pr. ct.
Chemical value per ton, \$46.35.

23. NITRATE OF SODA.
Nitrogen.....16.90 pr. ct.
Chemical value per ton, \$54.40.

24. ODORLESS PHOSPHATE.
See Slag, Thomas' or Basic.

25. REFUSE FROM SOAP WORKS.
Nitrogen.....4.25 pr. ct.
Phosphoric acid available..... 5.30 pr. ct.
" insoluble.....10.10 pr. ct.
" " total.....15.40 pr. ct.
Chemical value per ton, \$34.30.
To be finished in next issue.

FARMING CONVENIENCES.

Some cows have the bad habit of con-
tinually switching the tail during milk-
ing. I have seen a number of appliances

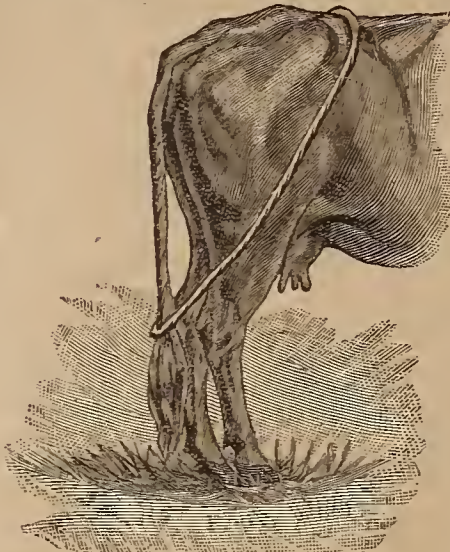


FIG. 1.

for preventing this, but none as good as a
loop of rope arranged as shown in Fig. 1.

Figure 2 shows a convenience for those
who saw wood alone.

It is a hickory bow fastened at one end
by a short bolt and slipped over the saw
at the other end, and held in place by the
handle. When not in use, it can be slipped
off and the bow allowed to straighten.
This bow stiffens the saw, adds a little
weight, and is about equal to a good boy
on the other end of the saw.

Michigan. E. R. KEECH.

OUR SHEEP HUSBANDRY NEEDS
INVESTIGATION.

At no time in the history of our country
have the industries been so carefully looked
into, as to economies and profits, as now.
Competition has forced upon us better
business methods, more careful systems,
and the conclusion that smaller profits
must be the reward of labor and capital
than at any former time in this country.
These are facts which are by degrees ac-
cepted as inevitable, and our people are,
with few exceptions, conforming all op-
erations in accordance.

All lines of business are conducted upon
a basis of strict economy. Small profits,
if well assured, are looked upon with
more satisfaction than formerly. The
costs are strictly considered before ventures
are made. Cheaper production is studied



FIG. 2.

with the most especial attention. In the
industries of this period fortunes are not
made in a day. It is the steady gain alone
that promises well. "The nimble penny"
rule in the race for competence is the best
that can be acted upon.

There is given to all industries a wider
outlook in all its parallel lines. The de-
tails from first to last are studied, know-
ing that no blunders are admissible in the
smallest item. The smallest profits are
duly reckoned. What were once counted
as refuse are shrewdly turned into profits
in manufacturing lines, and placed upon
the proper side of the ledger.

The sheep raisers have not so fully

recognized these changes, nor considered
the possibilities of cheaper production, as
have the manufacturers. The time has
come for more information and broader
views of all subjects affecting the industry.
The competition in the wool product of
the flocks is so important and serious, that
a more than passing glance is required.
An answer to the question why sheep
raising does not pay would puzzle the
wisest heads. The wool markets of this
country are sought by the sheep raisers of
the world. It cannot be doubted that our
markets are worth being sought after by
foreign wool growers. What do the
American wool growers know of the
methods and possibilities of those who so
persistently enter our markets and dis-
tress us in low prices? We imagine the
foreign wools are produced by cheaper
labor on cheaper lands. We speak of
them as pauper wools, without knowing
the cost of their production nor the profits
at which they are sold in our markets,
nor all the advantages and disadvantages
known in the various countries from
whence these wools come. We, of the
agricultural states, where lands are high
in price, and where sheep have to be cared
for continuously, where one half of the
year flocks are fed on grain and hay,
products always commanding cash values,
think it a hardship that we cannot produce
wool as cheaply as the manufacturer
wishes for. The fact that American wools
are so low in price as hardly to pay for
their production is not to be wondered at,
when we know that these foreign wools
come from countries of so genial climates
and generous pastures that artificial feeds
are unnecessary. It cannot be doubted
that much of their excellence depends
upon these natural advantages.

Cannot national protection be afforded
the American wool growers as may secure
our markets for our wool growers? There
is justice in such a demand. There has
been at times, but lacking that perma-
nence so desirable and satisfactory to
American wool producers. Is there not in
this country a possibility of cheaper pro-
duction that can successfully compete
with any regions of the world? All our
lands are not high in price. Sheep do not
have to be fed on grain and hay every-
where in this country. Yet all the wool
growers are distressed, or claim to be.
Why is this? Something is wrong, or
these things would not be so. It is high
time the facts were brought out and
known by us all. It cannot be that it
costs as much to raise a pound of wool in
Georgia as it does in Ohio or New York.
It cannot cost as much to raise wool in
New Mexico as in Iowa. If it does, the
sheep owners need to inquire with me,
why does it? Texas is joining with Ohio
in complaints of hard times, and the con-
ditions of climate, soil, feed and expenses
of handling sheep are very different. No
one would question the integrity of either
of these sheep owners, but there is no
similarity in the surroundings. The gen-
eral feeling of discontent of the high-
priced surroundings of the East is in
sympathy with the West and South-
western ranges, and even of the Pacific
coast. The average intelligence of the
American wool growers will compare with
that of any country of the world. The
quality of American wools will compare
with the wools of any country. In fact,
their superiority in strength makes it
possible to use the cheaper wools of the
world in cheapening the manufactured
products. Their own excellence affords
a market for the less excellent wools of
South America and other countries with
as fine a grade of wool but a poorer or
weaker fibre. Then, it is not the in-
feriority of American wools that favors
the use of foreign wools, but their excel-
lence and especially their capacity to
carry these weaker and cheaper wools.
This is one of the economies used by
manufacturers to cheapen their fabrics
without apparent detriment to the goods.
Yet it points to no possible economy for
the wool grower; but, on the contrary, to
his disadvantage.

In conclusion, there can be no longer a
question that the American wool grower
must know the whole situation surround-
ing his industry in every detail of man-
agement, to the most distant causes in-

fluencing prices of his wool. He has a right to know how his competitors can raise wool cheaper than he can, and how much his competitors realize in profits over and above the cost of production and expenses in laying it down in the American markets. The wool growers of the United States have undeveloped resources that may enable them to do what they now think impossible. The most intelligent are seeking for better information, that they may know their opportunities and benefits. They now only measure their capacities in the wool markets without knowing the capacities of their competitors. For aught the American sheep raiser knows, he is a terrible opponent of the foreign wool grower. When the better information is secured, and the lessons seem more possible than now apprehended, the American wool grower may find his situation far more hopeful than now. He has not less brains, less enterprise, less industry, but contending with opposition he does not understand, he may seem to have less persistence than he has. Until latterly, the relief sought was in protection wholly from the national congress. The signs of the times now indicate a spirit of inquiry and self-reliance that the issues may be understood and met in a manner that shall be more permanent and effectual. "Knowledge" is said "to be power," and to American wool growers it will be as helpful as in other ways and things.

IMPROVE YOUR DAIRYING.

BETTER BREED.—There is one thing sure, it will not pay to keep a poor cow; I don't mean poor in flesh, for some of the best cows are in that condition when in full milk, but one that gives a poor yield—poor in quantity and quality. It costs almost as much to keep a poor cow that it does to keep a good one, and while the good one will be profitable, the other will be just the reverse. But there are many so situated that they cannot afford to buy good cows, and having a lot of poor ones, what are they to do? The only thing to do in such a case is to breed to a pure-bred dairy bull or else give up dairying. Bulls of any of the dairy breeds can now be bought at reasonable prices, and nothing will pay better, as an investment, than a good bull to use in a herd of poor cows. The poorer the cows, the greater the relative improvement in the result of breeding to a pure-bred bull.

BETTER FEED.—Better feed must be given to the cows; even scrub cows will pay the difference in cash between good and bad feed. A poor cow fed on poor feed will surely make a loss for her owner, while a poor cow fed on good feed, though not a profitable piece of property, may be so managed that she will not bring her owner into debt. A cow fed on just about enough to sustain life cannot be expected to give much milk, nor to put much richness into what little milk she gives, but give her more and better feed and she will show its effect in the pail. The improvement will be more or less rapid, according to the previous bad feeding, but improvement there must be in some way, and if only in the shape of increase on flesh, it will enable her owner to dispose of her at something like a fair price and so save the useless expense of further feeding an unprofitable animal.

BETTER CARE.—It is astonishing how some men will ill-treat their cows, abuse them in every way, when every bit of abuse takes money out of their owners' pockets. I once knew a dairyman who drove his cows by means of a dog and hard swearing; every evening, in summer, you could tell half a mile off by the barking of the dog and the yells of the man that the cows were being driven up to the stable to be milked.

Cows must be treated with gentleness if the best results are expected, and this is one of the first things that ought to be learned in cow keeping. The man who cannot put his hand on any one of his cows in yard or field is not up to the mark by any means.

Cows should be kept in a comfortable stable in cold weather and have plenty of bedding to lie on. Many a stable is full of cracks that let in the cold, and every one of these cracks must be paid for by extra

feed. If the extra feed is not given, then part or all of that which would have gone to the production of milk, will go toward keeping the cow warm. It takes just so much feed to support life in a cow, when she is kept as comfortable as possible; the feed consumed beyond this amount goes to the making of flesh and milk. Now, if the cow is in a very cold stable, this additional feed may all go to support life, and the cow just holds her own; of course, there is no profit in keeping cows in this way.

BETTER CARE OF THE CREAM.—Milk will raise all of its cream if set in any of the old or new fashioned ways, though the portable creamery will give the best results, all things considered; but the cream needs better care than it usually gets in many farm dairies. If the cream is allowed to stand for several days, until there is enough on hand to make a churning, it should be kept cool enough to prevent it from getting sour, and be thoroughly stirred twice a day; then, the day before it is churned it should be set in a temperature sufficiently warm to make it slightly acid, and, when churned, tempered to 60° to 64°, according to the season of the year. A. L. CROSBY.

AN ACRE IN FRUIT.

I recently came across a schedule of one year's expenses as published by an agricultural writer, one item of which was \$137 for fruit. This was consumed by a family of six. With some curiosity to know just how much fruit this sum represented, I took a pencil and jotted down what seemed a large amount of each of the twelve varieties of fruit commonly grown and used. The items were thirty bushels of apples at 50 cents;

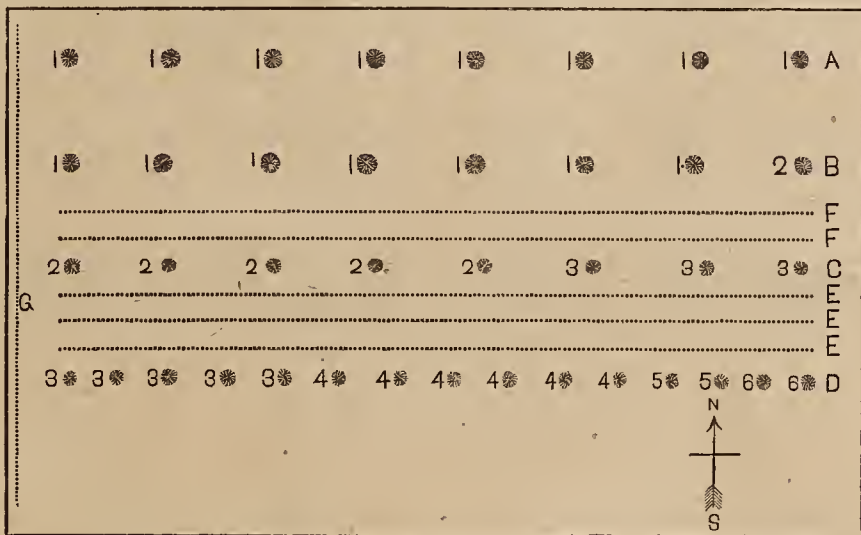


Fig. 3.

fifteen bushels of strawberries at \$4; eight bushels of raspberries and blackberries at \$3; one half bushel of gooseberries at \$1; two bushels of currants at \$2; three bushels of peaches at \$2; one bushel of plums at \$4; four bushels of pears at \$1.25; four bushels of grapes at \$1.50; one bushel of quinces at \$2; three bushels of cherries at \$2. The whole came to \$132.50, leaving \$4.30 to be invested in foreign fruits.

These prices are, however, high for part of the fruit, and I found, when reduced to prices commonly received, only aggregated \$97.30. This was still a goodly sum to be expended by a farmer's family for fruit, and I began to consider the amount of outlay in land and plants necessary to produce this amount. The following is the result: Apple trees fifteen years from planting may be expected to produce two bushels each. All the other tree fruits may be expected to produce one half of a bushel in periods varying from six to fifteen years from planting. To produce thirty bushels of apples would require fifteen trees, and twelve bushels of other tree fruits would require twenty-four trees; all of which could be placed on less than three quarters of an acre of ground, leaving the remainder of the acre for the berries and grapes. Figure 3 is a diagram showing how all that is requisite could be planted on an acre without encroaching on any neighbor, even if the acre was bounded on all sides by property belonging to others. The plot lies east and west, and is sixteen rods long by ten rods wide. The trees marked 1 in rows A and B, on the north side, are apple trees, with one cherry tree, marked 2, in row B. The cherries are continued in row C, and three pear trees, marked 3, put in to complete the row.

The trees in these three rows are two rods apart and one rod from the boundary fences. In the row D are five pear trees, marked 3; six peach trees, marked 4; two plum trees, marked 5; and two quince bushes, marked 6, all sixteen and one half feet apart in the row. Between the quince bushes (in the row) are planted gooseberries, and farther west, currant bushes. Between the rows J and D are three rows of raspberries, marked E, and between C and B, two rows of blackberries, marked F. If the ground is kept rich and cultivated, the berries will suffer but little from shade for a dozen years or more, and for that matter, the portion devoted to apples could also be used for raspberries if desired. The open space south of the trees, containing forty-eight rods of ground—or nearly one third of an acre—if rich and well cared for, should produce of the larger kinds of strawberries, such as Sharpless, Bubach, Jessie or Downing, about fifteen bushels; if planted to Crescent with one fifth Wilson or Sucker State as fertilizer, it might produce thirty or thirty-five bushels. The row marked G, across west end, consists of nineteen grape vines two and one half feet from boundary and eight feet apart. To produce four bushels they must yield eleven pounds per vine, a possibility not difficult to reach.

L. B. PIERCE.

PHOSPHORIC ACID.

The importance of phosphoric acid as a fertilizer, and the demand for it in many soils, leads to the inquiry of the best means of procuring it—that is, in what form. Of the high grade raw materials that furnish it we have, Thomas' slag, South Carolina rock, Grand Caymaus, Bolivian guano, Mona Island, and by a

eial value of the acid was employed, as near as could be, in each case, and on the basis of 256 pounds of dissolved bone black to the acre, and the calculated result was as follows, as related to grain products:

	lbs.
Dissolved bone black.....	3902.1
Thomas' slag.....	1452.8
South Carolina rock (floats).....	1315.2
Grand Caymaus.....	2147.2
Bolivian guano.....	1337.6
No phosphoric acid.....	697.3

And of fodder we had

Dissolved bone black.....	3745.6
Thomas' slag.....	1849.6
South Carolina rock.....	1849.6
Grand Caymaus.....	2180.8
Bolivian guano.....	2165.6

It should be said that all through the season, soon after the crop was started, it was unusually dry and very unfavorable to the plants upon which the raw material was placed, the same being in a more insoluble state, but the results give figures that form an interesting study. Of course, the question naturally presents itself, what will be the effect upon future crops? In other words, will the native phosphates, by their continued and prolonged effect, make up for what appears to be a deficiency in the crops as reported. To determine this we continued crops in the year 1889, and will give the results in a subsequent article. WM. H. YEOMANS.

Columbia, Conn.

THE TARNISHED PLANT-BUG.

THIS insect is one of the commonest and most widely distributed American species. It is found in nearly all the states of the Union, and also in Canada and British America. It is a true bug, belonging to the order Hemiptera, and gets its food by inserting its sharp beak into the succulent leaf or stem of a great variety of plants and sucking out the sap.

Its habits have lately been summarized by Mr. C. W. Woodworth, of the Arkansas Experiment Station, as follows: "It lives upon almost all kinds of plants, proving the most injurious to various flowers and garden crops, especially to potatoes. In the nursery it stunts the growth of the young stock in the spring, and by killing the blossom buds prevents the trees in the orchard from bearing a full crop of fruit. Strawberries are caused to shrivel up and 'button,' and other small fruit is rendered less valuable on account of not being full and plump."

The tarnished plant-bug is a small, brownish insect about one fourth of an inch long. It is shown somewhat magnified in the accompanying illustration. It passes the winter in any protected place, in the adult state.

As to remedies, Mr. Woodworth remarks that it is very evident that an insect with such variable food habits will require different methods of combatting it under its different circumstances. In the flower garden, and even in the nursery, it could be jarred from the beds in which it passed the night, early in the morning before it becomes active. This would destroy many of the pests and prevent much injury. The insect is quite sluggish early in the morning. Pyrethrum and kerosene emulsion are good topical remedies. The emulsion is made by adding two parts of kerosene to one part of a solution made by dissolving half a pound of hard soap in one gallon of boiling water, and churning the mixture through a force pump with a rather small nozzle until the whole forms a creamy mass, which will thicken into a jelly-like substance on cooling. The soap solution should be hot when the kerosene is added, but of course must not be near a fire. The emulsion thus made is to be diluted, before using, with nine parts cold water. It should be applied as a fine spray with a force pump and spray nozzle. What is known as kerosene powder is also a promising remedy. This powder is made by thoroughly mixing one part of kerosene with ten parts of plaster or some similar material. It is then to be applied to the plants on which the bugs are congregating.

CLARENCE M. WEED.

Ohio Agricultural Experiment Station.

BINDER TWINE.

It requires annually 55,000 tons of Binder Twine to bind the grain crops of the country. Ten years ago all the self-binders in existence required but a few tons. The industry practically started with a visit made by Mr. Wm. Deering, the harvester manufacturer, of Chicago, to Hon. Edwin H. Fittler, a rope manufacturer, and the present mayor of Philadelphia. Mr. Deering subsequently found it so difficult to get perfect twine that a few years ago he equipped a large twine factory with the best and most modern machinery, and is now making his own twine. The value of the annual output of binder twine is about \$14,000,000.

Our Farm.

GARDEN GOSSIP.

BY JOSEPH.

KUMERLE LIMA BEAN.—This was introduced a year ago by Messrs. Thorburn & Co., of New York. It is a dwarfed Dreer's Lima, as completely reduced to bush form as Henderson's dwarf Sieva, or Burpee's New Wonder, introduced this year, which is a dwarfed, large Lima. The Kumerle Lima, however, is not to be had this year; even Thorburn & Co. do not catalogue it. This is bad news. Now, while it cannot be had at any price, I am yet in hopes that some of the readers of FARM AND FIRESIDE may have given it a trial last year, and now find himself or herself in the position, and inclined, to spare me a few seeds in exchange for some other novelty.

A GOOD BOOK.—Among books recently published, I think the Horticultural Rule Book, by Prof. L. H. Bailey (Cornell University), and published by the Garden Publishing Co., New York, is deserving of special and favorable notice. It is crowded full of knowledge useful to every gardener, such as remedies for insects and plant diseases, directions for trapping injurious quadrupeds, recipes for grafting waxes, cements, paints, mortars and glues, suggestions for storing vegetables, analyses, and a great many tables and compendiums of other useful facts. It costs \$1 per copy, and is abundantly worth it.

HOW THE TOMATOES BEHAVED IN 1889.

The following is the result of a very careful test of the best out of eighty varieties of tomatoes grown on our grounds last year. It is given without favor or bias. Careful observations were made especially as to time of ripening and keeping quality:

RED VARIETIES.—*Ignotum*—Ripe in 118 days from planting. Fruit kept in good condition after being picked 18 days; fruit large and meaty; cooks thick, not watery; of beautiful red, and very attractive to the eye; the largest cropper of any tested; flavor of the best—a mild, sub-acid, very desirable for table use; bears longest of all, until killed by frost. October 12th the fruit was yet of good size.

Prelude—Ripe in 122 days from planting. Kept 12 days; fruit small, prolific; quality good; bears heavy and long.

Station Tree—Ripe in 116 days; earliest; kept 10 days; medium size; good flavor; heavy cropper, but does not ripen as fast as some others.

Volunteer—Ripe in 125 days. Kept 19 days. Large cropper, firm, bright red, sound fruit of excellent quality; bears a long time.

New Jersey—Ripe in 126 days; kept 6 days; good sized, solid, and of good quality. Cracks but little in rain.

Matchless—Ripe in 128 days; kept 19 days. Bright red, solid, of good quality. The large crop stood rain well.

Livingston's Favorite—Ripe in 128 days; kept 8 days; large, fine, smooth, continuous bearer.

Lorillard—Ripe in 123 days; kept 15 days. Medium size, of good quality, smooth, solid; bears a long time.

Paragon—Ripe in 121 days; kept 9 days; good quality; heavy cropper and long in bearing.

PURPLE VARIETIES.—*Turner's Hybrid (Mikado)*—Ripe in 130 days; kept 5 days; large to very large, some wrinkled. The large crop ripened in a short season; can't stand rain.

Aeme—Ripe in 128 days; kept 5 days; medium sized, smooth, solid, a good crop.

Climax—Ripe in 128 days; kept 7 days; good bearer of smooth, solid fruit; cracks in rain.

YELLOW VARIETIES.—*Golden Trophy*—Ripe in 128 days; kept 5 days; best of the yellows.

Golden Queen—Ripe in 124 days; kept 5 days; good bearer; handsome.

We give this just as the varieties proved themselves during the past most unfavorable season, admitting, however, that no single test is ever final. Please note the vast difference in the keeping qualities between the red sorts on one side and the purple and yellow ones on the other.

Queens, N. Y. V. H. HALLOCK & SON.

Orchard and Small Fruits.

CONDUCTED BY SAMUEL B. GREEN.

THE BUFFALO BERRY.

We have been cultivating the buffalo berry for a number of years, and find it a profitable berry to grow, particularly where fruit is scarce. The berries are always in good demand in our market, bringing as much per quart as red currants. The trees often attain the height of ten or twelve feet, and from three to four inches in diameter. They commence to bear when three or four years old. The berries ripen in August, and remain on the trees in good condition until November. The fruit, in size and color, much resembles our red currant, having an agreeable acid flavor, excellent for jellies, jams, etc. The bright scarlet berries, interspersed with silvery leaves, makes the buffalo berry an ornamental suitable for the lawn or garden. Although they are best adapted to a sandy location, they will thrive in almost any soil. Seed should be sown one and one half inches deep, and the young trees transplanted in rows eight feet apart when one or two years old.

Nebraska.

JOHN H. DOELLER.

TO KILL GOPHERS.

L. J. Beach informs a reporter that he has killed nearly all of the gophers on his ranch of thirty acres (which was formerly a portion of the Boudish ranch, on the Saratoga road) by using carbon bi-sulphide on cotton wadding and then sticking the cotton in the holes, covering it over with dirt. He says it is essential to find every hole on the tract and fill them up. He used only two gallons of carbon bi-sulphide and about one dollar's worth of cotton, the total cost being about \$4.—*Los Gatos News*.

CORRESPONDENCE.

SCRAPING OFF THE BARK OF OLD FRUIT TREES.—A correspondent writes from Westfield, Ill., of the success he has had in renewing the growth of his old fruit trees by scraping off all the old bark from their trunks, from the branches to the ground. He went to work June 21st, 1889, and scraped the bark from his Sackel pear and apple trees, which were not growing thriftily; did not disturb the green, living bark at all. The result has been that they made a new start and have produced fine crops of fruit since, and he did not lose a single tree by the process. We know that a similar plan to this has been employed to some extent in France, to renew the life of old elm trees, and to destroy the eggs of insects which were lodged in the old bark.

INQUIRIES ANSWERED

BY SAMUEL B. GREEN.

Paper for Wrapping Fruit.—J. G. W., Farmington, N. M., writes: "Where can I buy suitable paper for wrapping green fruit? We ship our peaches, and have to wrap them. I would like different colors of thin, soft paper."

REPLY:—Such supplies you can obtain from any of the garden supply stores who advertise in this issue.

Pears on Apple Stocks—Peaches on Wild Plum Stocks.—C. S. D., Jefferson, N. C. Pears cannot be grown successfully on common apple-tree stocks, or on crab-apple stocks. —Peaches will grow and do pretty well on plum stocks. Plum stocks are better than peach stocks on wet land, but for general use, peach is best budded on peach.

Pruning Box-Elder—Black Currants or Red.—V. S., Ziskov, S. D. The best time to prune box-elder, or any other tree, is some time after the foliage has well started and the first strong flow of sap has ceased. The box-elder, however, is so hardy it may be pruned at almost any time.—The red currants are much better for you to plant than the black kinds, and of the reds, the Victoria and Red Dutch do the best in your section.

Apple Aphis.—W. B. M., Rehoboth, Mass., writes: "What is the matter with my apple trees? The bark on some of them began to turn black a year ago. It is growing black on all of them now, and one of them is nearly dead."

REPLY:—I think your trees are troubled with the apple aphis. The remedy consists in washing the trees with kerosene emulsion, rubbed into the bark with a stiff brush. This aphis often attacks the roots of apple trees, and may be on the roots of your trees, in which case you will see them as little clusters of woolly lice on the roots.

Fertilizer for Fruit.—J. C. B., Crossville, Ill. A most excellent fertilizer for one acre of fruit is made by mixing together four hundred pounds of tankage and one hundred pounds of high grade muriate of potash. This fertilizer is a most excellent one for all kinds of fruit. Unleached wood ashes may be used instead of the potash, but should be applied in

larger quantity, and ground fresh (not burned) bones will nearly take the place of the tankage. The value of the tankage consists in the amount of nitrogen and phosphoric acid it contains, and these amounts vary somewhat. A good tankage will contain four per cent of soluble phosphoric acid and seven per cent of nitrogen. The Minnesota Packing and Provision Company, of South St. Paul, Minn., sell such a tankage at \$12 per ton, which is cheaper than it can be bought in Chicago, or anywhere else that I know of.

Beans as an Orchard Crop—Raising and Keeping Squashes.—M. E. C., Hampton, Mo., writes: "What objection is there to beans as an orchard crop?—What would be the best varieties of squashes to plant in an orchard, to keep for winter market? We have a good, outdoor cellar, that has been frost proof so far (24° below zero once). Would they probably keep well in it?"

REPLY:—Beans are all right for an orchard crop.—For a winter squash, the Hubbard is by far the best for marketing, where it can be raised, but Essex Hybrid, also, is a good winter squash and will often grow where the Hubbard does not do well.—In order to keep squashes well they must be hard shelled when gathered; must be stored in a dry atmosphere and handled with great care to prevent bruising. It is best to have the squash-room at a temperature of from 40° to 50°, but squash will keep well if the temperature is a little lower or a good deal higher. I have this winter kept several tons of squashes, until lately, in a dry cellar at an average temperature of 60°. This is hotter than I like it, but they have kept well and I still have a ton in the cellar in good order. Most cellars are too moist for this purpose, and the rule may be laid down that any cellar that will keep potatoes well is too moist to keep squashes. A good, dry room free from frost is a good place for this purpose.

Rust on Raspberries.—Cuttings Tip Downward—Seedless Melons.—S. G., writes: "Can soil be too rich for raspberries? I have some bushes that blast every year. If the soil is not too rich I do not know why they blast.—Can the tip end of any kind of cutting be put downward, and the course of sap changed? I have seen black currants that were said to have been produced by putting the top end of cuttings downward.—Can watermelons be grown with no seed in them?"

REPLY:—I do not think a soil can be too rich for raspberries, though a soil may have too much organic matter in it—as, for instance, an old, reclaimed meadow; but very likely your plants are sickly on account of the rust, and you had better throw them away and commence with new plants, after allowing at least one year to go by without raising raspberries, so that the spores of the disease may die out.—Sometimes cuttings grow when put in upside down. Willows and poplars often do when so planted, but such a planting of a cutting or a graft does not change the characteristics of the growth, for the growth from the buds simply turns around and grows upwards, thereby causing a bad start. If red currants were grown from cuttings set upside down, the plant from them would be red currants still, and the same as the plant from which the cutting came.—Such a thing may be possible, for we have nearly seedless cucumbers, seedless grapes and other fruit, but I have never seen or known of a seedless watermelon.

Orchard Filled with Sediment.—F. K., Seaton, Oregon, writes: "We have a large orchard of young trees, quite a number of which are bearing. During the freshet of last February, sediment was deposited, from one foot to four feet deep, around the trees. What effect do you think it will have if left that way?"

REPLY:—It is impossible for me to tell you what the effect will be on your trees. I have never had just such an experience with fruit trees. I am very sure, however, that where only one foot of soil has been put around the trees it will occasion no trouble. If it were not too much labor I would take away some of the soil around the trees, where the soil is four feet deep, and reduce it to two feet in thickness. In the case of gooseberries, currants, blackberries, etc., it would be well to draw away the extra soil, just around the plants, and to gradually put it back again, as the plants grow. By this means the plants will not be smothered out and will gradually adapt themselves to the change of level of the soil and will send their roots out near the surface. The soil should be kept cultivated to make it open and loose and to allow of the air working on it. I should be afraid that raspberries and blackberries, covered two feet deep, would not send their new suckers up to the surface, though if covered only one foot I think they would, if the soil was kept open.

Borers.—J. A. D., Ozone Park, N. Y., writes: "I am worried about my currant bushes. The new stems which would bear the fruit next summer are easily broken off by the wind, so brittle are they, by being bored, from the ground up, through each stem, by a little, white worm, about half an inch long. Some time ago a correspondent gave a favorable opinion of the use of strong brine around the roots of currant bushes, but did not say when to apply it."

REPLY:—Salt would be useless around your bushes for preventing the work of the stalk borer, which is evidently the insect troubling your currants. The only remedy is to prune currants in the hush form (do not use the tree form) and cut out the stalks whenever they become weak, for they are then generally infested with borers. I have sometimes thought that by putting a large amount of wood ashes around the plants the moths were kept from laying their eggs in the stalks. Anyway, such an application will encourage a most excellent growth and help in overcoming the damage already done by the borers.

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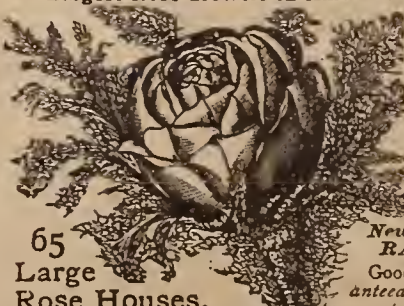
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EXTRACTS
FROM CORRESPONDENCE.

FROM ARKANSAS.—There are few counties that yield a larger crop of cotton than Woodruff. Cotton Plant is in the finest farming section in the state. Besides the farming interest there is much valuable timber, especially cypress. Large quantities of shingles are made and shipped each year. W. T. C. Cotton Plant, Ark.

FROM KANSAS.—We have a rich, black soil in this part of Kansas, and raise all sorts of grains and fruits grown in the temperate zone. It is a great corn country; many thousands of bushels are now stored in farmers' cribs. It is worth 18 cents per bushel; wheat, 70 cents; cattle, \$1 and \$4.25 per hundred weight; hogs, \$3.60; good, heavy horses sell for \$100 to \$125. Good water is found at a depth of 20 to 30 feet. Sabetha, Kan. H. T.

FROM ILLINOIS.—Clay county has a clay soil on the prairies and a deep, sandy loam on the bottom lands. All kinds of products are raised here. The apple crop in 1889 brought to this county over fifty thousand dollars, an average of over \$100 per acre. The world cannot beat our strawberry facilities. One little railroad station shipped four car-loads of berries daily, during the season. Land is worth from \$12 to \$50 per acre. Orchards cannot be bought at reasonable prices. E. H. Iola, Ill.

FROM NEBRASKA.—It is seldom very muddy here, as it dries up very quickly. The country is full of corn, worth 14 to 15 cents per bushel. Hogs bring \$3.30 per hundred weight. Land brings from \$8 to \$20 per acre. We have fine schools. A great many farmers are contracting to raise sugar beets for the Grand Island Sugar Manufacturing Co. Nebraska will produce her own sugar in a few years, and will also produce her cloths when the great manufacturing company gets started in Kearney, our county-seat. H. A. B. Sweetwater, Neb.

FROM MISSOURI.—Sullivan county looks as though it was specially designed for stock raising. We raise some of the best horses that go on the Philadelphia market. We can raise almost anything here in the vegetable line. We raise corn, oats, wheat, all kinds of grasses, apples, peaches, pears, strawberries, blackberries, and everything that it takes to make a first-class garden, farm or field crop. Land ranges from \$10 to \$25 per acre. Sheep husbandry is just in its infancy yet in this country. The Merino sheep is the best for this locality. Poultry raising is a good occupation here; it pays well on small investments. Pollock, Mo. H. O. L.

FROM NEBRASKA.—The country in Custer county is somewhat diversified. We have the long, level, broad valleys peculiar to the West, the beautiful tablelands many hundred feet high, the breaks or deep-cut canyons lying between the valleys and tablelands, and the ridges and knolls of waste, sandy land. There are thousands of acres of land, with no outlet for water save straight down into the ground. We have fine roads the year around. Our porous soil is easily worked. It can be put from its wild state into cultivation at a cost of \$2 per acre. The very choicest lands, such as will produce corn at the rate of 60 bushels per acre, can occasionally be got at \$10 per acre. This county is void of natural timber, coal or minerals; hence, it will never be a manufacturing country, and we never will have a market right at home. But we have prospects of a western market in the great mineral fields of Wyoming. A. A. S. Ortelio, Neb.

FROM FLORIDA.—The frost in Florida on the morning of March 17th was more damaging in some localities than the great freeze of 1886. It came at a season when the fruit buds were out and many trees in bloom and full of sap, and not only destroyed the bloom, but in many places split the bark and destroyed the tree, even large, bearing trees, while in other localities the trees were in full foliage, and in some cases full bloom. Notably is this the case at Interlachen, which escaped damage received as far south as Indian river. The destruction is generally observable on low, flat lands, and the immunity from the damage is largely on high, rolling, pine lands. The vicinity of Interlachen escaped severe damage in the great freeze of 1886, and all the frosts from that time to this that have been damaging in other places, and marks this northern portion of the orange belt the safe place of all others to plant a grove, and its 1,200 acres are rapidly increasing. Though the crop of 1890-91, over large areas, has been destroyed, enough localities have escaped to give assurance that the land will get a fair quantity of the delicious fruit. G. W. H. Interlachen, Fla.

FROM SOUTH FLORIDA.—Florida is a large country. R. B. P., in the FARM AND FIRESIDE, of Dec. 1, 1889, claims to be in south Florida. It took me two months, diligent inquiry, to learn where Pasadena is, and I found it to be nearly 200 miles north of Fort Myers, or about as

far north of us as we are north of Cuba. I knew it must be a long way north, to have such hot summers and yet such cold winters as he speaks of; he says he saw it 105° in the shade. That is a little hotter than I ever heard of before, in Florida. We have seen it 26° above zero in winter. That is not quite as bad as 26° below. I have learned that the farther north you go, in this peninsula, the more extreme are the rainy seasons and the dry seasons, and the greater are the extremes between the heat of summer and the cold of winter. Two hundred miles of latitude will make considerable difference of climate, in any country. Our rains of winters are not always of sufficient quantity, and this winter has been the driest ever known, yet if R. B. P. were here, he could see our people ship cabbage heads off that weigh ten to sixteen pounds, and other vegetables in proportion, grown in our hammocks, without irrigation. It is useless to expect pineapple, coconuts, mangoes, sapodillas and tender vegetables to grow perpetually, where frost comes every winter. L. C. W. Fort Myers, Fla.

FROM OHIO.—Springboro is nearly midway between the two Mamis. The land, from a level divide, becomes nicely undulating and terminates in a line of moderate hills that borders the broad valley. Warren is one of the old counties. My grandfather settled at Deerfield in 1796, and like many others, his descendants have scattered over the western country. There is one thing of which we are justly proud, and that is the distinguished sons of our country. Our climate is changeable and hard on some who are not in the best of health. We have our blizzards in winter and storms in summer, but you never heard of us begging for bread. We have no picturesque mountain scenery to gaze upon, nor a monotonous plain, but to the eye of the observer, a scene far more gratifying—that of a bigly cultivated soil, almost presenting the appearance of one vast garden. We have a diversified soil, ranging from a strong clay to a rich, black loam, and all under a high state of cultivation. All kinds of grasses do well here, but we who have tried alfalfa have made a failure of it, possibly from bad seed or not having a proper understanding of its management, as I hear of some success in New York. As to stock raising, we are divided among horses, cattle, hogs and sheep, and we can make a favorable showing with any other district. Good horses are worth from \$150 to \$200. Good drivers are worth from \$200 to \$500. Cattle are worth \$3 to \$1 per hundred weight; hogs, \$3.75 to \$4; sheep, \$3 to \$6. Our chief crops are wheat, corn, oats, rye, barley, millet and some Hungarian. Corn produces from 35 to 75 bushels per acre, and on good ground, often 100; wheat, 15 to 40; oats, 25 to 70. Wheat is now worth 70 cents, and oats 20 cents per bushel; corn, owing to a short crop, is scarce, and is governed by a local demand, which is from 30 to 50 cents. Potatoes are also grown to a considerable extent, and they are worth about 35 cents. Another important crop is our tobacco crop. This brings in more money for its acreage than any other, from the fact that it all sells, and is now worth from 7 to 8 cents per pound. Apples, pears, cherries and grapes do well. Peaches, plums and quinces do reasonably well. Berries also do well, and all bring reasonably good prices, as we have good shipping facilities in two great trunk lines. There is almost a continuous cloud of smoke from the vast manufacturing plants from Dayton down the great Miami valley to Cincinnati, and their thousands of consumers make a ready market for much of our produce. Land is selling at from \$45 to \$75 per acre. Springboro, Ohio. A. G.

FROM TENNESSEE.—There are persons who seemingly believe Nashville to be the Eden, near the center of the world's garden spot. Nashville people have pretty fair grounds upon which to base their opinion, when all things, including climate, soil, general resources, healthfulness and variety of productions, are fully and intelligently considered. There are certain sections farther south that may be, for some, more pleasant a few months in the winter; and some localities in the North and West, where about two months of the summer might be more fully enjoyed, but for those who must find a home to remain at during all seasons, there is no locality more desirable, as regards soil, climate, health, water and its adaptability to the production of nearly everything grown from the earth, than may be found in Middle Tennessee. The surface of the country varies greatly; some of it is a beautiful, level plain, covered over with finely improved farms; some rolling, with bluffs and broken places near the creeks and rivers, and some mountainous and hilly, with great valleys of rich, loamy soils between, the whole being interspersed with rivers, creeks and running streams of clear water. Within a radius of one hundred miles, taking Nashville as the center, nearly every variety of soil may be found; growing to a greater or less extent, almost every kind of productions good for the maintenance of man or beast, except only such as are grown in tropical climates. The principal crops grown in this section are corn, wheat, rye, oats, barley,

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cotton, tobacco, potatoes, strawberries, almost every kind of clover and grass known, besides fruits and vegetables of every kind and variety, except of a tropical nature. Throughout the section, and especially around and near Nashville, there are many fine stock farms, where nearly all breeds of imported and native stock are kept or raised, such as horses, mules, ponies, cattle and sheep, much of which is sold at fancy prices, both for home use and shipment to other states. Lands vary much in price, according to location, soil and improvements. While some improved lands may be purchased as low as \$10 to \$15 per acre, there are others, desirably located near the city, that would bring \$200 or more per acre. From \$20 to \$50 per acre is about the average price of farm lands, a few miles distant from the city. Nashville, the capital city of Tennessee, lies on both sides of the Cumberland river—which furnishes it with good steamboat navigation nearly all seasons of the year—and has an estimated population of 100,000. A splendid double track, iron bridge, built upon stone piers, spans the river, connecting the two sections of the city. It lies immediately between those sections wherein are produced the two great money crops of our southland, tobacco and cotton; and it is surrounded by some of the finest agricultural regions in the world, when all of their capabilities for the production of a great variety of crops are duly considered. Whilst the tobacco growing section reaches within a few miles of the city on the north, cotton fields may be found within a few miles on the south, the whole region producing luxuriantly all cereals and grasses as named. The main portion of the city being on the west side of the river, is built upon a solid bed of limestone, the bottom of which has never yet been found. So that its people may very properly say, "Our foundations rest not upon sand, but upon solid rock." The surface of the ground upon which the city stands is quite rolling, and but few of its streets, some of which are paved with granite blocks and some with broken rock and gravel, are level, though the grades of none are sufficiently steep to prevent the running of street-cars. This unevenness, however, is an advantage, more than otherwise, as it adds picturesque beauty to the city, furnishes good drainage, and thereby aids much in making it what it claims to be, one of the healthiest in the Union. It has lately completed a new and magnificent system of water works, at an expense of several hundred thousands of dollars. The water being filtered through sand and gravel, upon an island in the river, several miles above the city, and then pumped through a large main to an immense reservoir, built of stone upon a high hill, and from thence taken in pipes to all parts of the city. Nashville is known as a great educational center, or as some term it, the "Athens of the South," and well deserves the name, as there can be but very few cities that possess greater facilities for education. Besides its many colleges or universities, and other institutions of learning, for both male and female, including its Vanderbilt, of national renown, and also the noted Fisk's University for colored students, it has many splendid public or free-school buildings. The free-school system also includes public buildings, teachers and free education for colored children, of a first-class grade, but separately and apart from those used by the whites. There are no race troubles in Tennessee; the two races work and co-operate each in the interest of the other in perfect harmony. Both the laws and the people of the state fully respect all just rights of the colored people, legal, political and otherwise. Many of the colored people of Tennessee are good and true citizens, who, under all circumstances, deserve much credit; which fact the intelligent white people freely acknowledge, and all that is necessary for the accomplishment of a peaceable and just solution of this much talked of race question, is for mischievous fanatics to let it alone. Nashville is fast becoming a great manufacturing center. It has several large cotton factories, iron works, woodworking establishments, flouring mills, furniture factories, etc. Owing to its central and healthy location, its numerous outlets by river and rail, with good turnpike roads leading out in every direction, its fine agricultural country on every side, furnishing cheap supplies, its large bodies of timber near at hand, its great bed of coal and iron ore within convenient distance, and its money-producing cotton and tobacco fields on each side, it does seem that Nashville has almost every requisite necessary for making herself a large and prosperous city, in the way of manufacturing and otherwise. Her wholesale trade, which includes almost every variety of goods, amounts to many millions annually, whilst her retail business is very extensive. The state capitol, of light colored limestone, is a massive building, standing upon a high eminence, and from its dome, the city and much of the surrounding country may be seen, the whole furnishing a magnificent landscape view that no visitor should fail to see. In conclusion I wish to say, that the foregoing was not written as an advertisement, but for such readers of the FARM AND FIRESIDE, who, like myself, find pleasure and interest in reading pen sketches of lands and people otherwise to us unknown. And to say further, that all good people, it matters not whence they come, or what may be their politics or religion, are welcome, either as visitors or permanent settlers, to the city of Nashville, or to any other section of the state of Tennessee. St. Bethlehem, Tenn. G. H. S.

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Our Fireside.

THE WAY OF THE WORLD.

Laugh, and the world laughs with you;
Weep, and you weep alone—
For this brave old earth
Must borrow its mirth,
It has trouble enough of its own.

Sing, and the hills will answer;
Sigh, and 'tis lost on the air.
The echoes rebound
To a joyful sound,
But shrink from voicing care.

Rejoice, and men will seek you;
Grieve, and they will turn and go,
They want full measure
Of all your pleasure,
But they do not want your woe.

Be glad, and your friends are many;
Be sad, and you lose them all.
There are none to decline
Your nectared wine,
But alone you must drink life's gall.

Feast, and your halls are crowded;
Fast, and the world goes by.
Succeed and give,
And it helps you live,
But it cannot help you die.

There is room in the halls of pleasure
For a long and lordly train;
But one by one
We must all file on
Through the narrow aisles of pain.

Life's Changes.



BY
MARAH ROCKE.

CHAPTER I.

I, DAR! What
erly hizness
ye got helpin'
yo'self to Miss
Mabel's ap-
ples? Jist you
go right
along," and
Aunt Chloe
drew her
portly figure
up, as she
tried to look
fierce at the
forlorn-look-
ing figure,
travelworn
and dusty,
who had
climbed on

the topmost rail of the fence enclosing the old apple orchard, and was helping himself eagerly to the red-cheeked apples hanging so temptingly near.

He looked up with a startled air, and Aunt Chloe saw a young, sad-looking face, with a tired, hungry expression that touched her motherly heart, and she called out:

"Don't be skeered, honey; ef yo' is starved, come in and I'll give you sumpin' nuff site bettah for yo' hongry insides dan dem nasty green apples, what aint mo'n half ripe, no way," and the boy climbed down and came slowly toward the house.

She gave him a seat on the porch, shaded by trailing sprays of fragrant jasmine, which had climbed to its low roof, and went into the spotless kitchen on her charitable errand.

He gave a little sigh of relief as he rested his head against the railing, for he was very weary. Many long miles he had trudged since morning, and many more were to be passed over before he reached his contemplated home. He was alone in the world, with no loving mother-hand to minister to his needs; no tender mother-heart to feel for his disappointments or to cheer him in his efforts to make his way through the world.

He had watched with bitter tears while kindly hands had made her a last resting place under the willows in the quiet churchyard near their old home, and when all was over, had gone forth to seek a distant relative, whom he hoped would be willing to aid him in his efforts to complete his education, in return for the help he could render.

As all their little means had been exhausted in ministering to the needs of that loved mother in her long illness, nothing was left after their indebtedness had been paid. So Ray Ventnor was fain to go out into the world with empty pockets and nothing but the small bundle containing his few, carefully-kept articles of clothing. Nothing had passed his lips since the early morning, and the rosy apples looked so tempting hanging low by the fence he could not resist helping himself to one, till startled by Aunt Chloe's warning call.

Soon she emerged from the kitchen, a huge sandwich of ham and biscuit in one hand and a bowl of milk in the other, and placed them on a bench by his side.

"There, he'p yo'self, honey. Reckon yo' needs it bad nuff," which he did, gladly, as he thanked her for the generous gift.

Seating herself on the broad steps, she

managed to make herself pretty well acquainted with the most of his short history.

"Jist you wait till Miss Mabel dun cum home. Reckon she wants a boy 'bout yo' size to he'p de ole man tend de gardin' au' tings. He's gittin' mighty ole and stiff and can't git round spry like he ust to, no more 'tall. She's jist gone to de village ov an arrant, and'll be comin' back 'fore long, now. Why, dar she is, shua nuff," and as the gate clicked, a girlish figure came slowly up the walk.

Fair and cool she looked in the white muslin dress, a wide-brimmed hat shading the fair, oval face, whose rounded cheeks had stolen the tints of the wild rose, and whose sunny hair clinging damp, tendrillike curls around the white brow. She raised her eyes with a look of inquiry as she came up to the porch, and Aunt Chloe said, as she rose to go in:

"He's jist stoppin' fur to rest awhile, and I tole 'im to wait till you cumed, and mebbe you'd find sumpin' for him to do. He might help yer Uncle Jim a right smart bit, and he's gittin' so ole and stiff, 'pears like he aint good fer nuffin, no mo' no way," and Aunt Chloe disappeared in the pursuit of some neglected duty, having had her say, which she considered as her due privilege, being she had been Miss Mabel's mainstay and adviser so long.

Ever since the delicate mother, who could not bear the rude transplanting of herself and household idols from the sunny, southern home which had been hers, to this bleak, northern country, had faded silently away, leaving her little Mabel to the protecting care of Aunt Chloe and Uncle Jim, tried and true were these faithful friends. As slaves they had served her mother's family, and when

fall, and when the term of school opens at the village, we might arrange it so you could attend. I think, perhaps, I can find time to help you in your studies, if you need help. As I profess to be a schoolmarm, perhaps, I will be competent to do so. How does the plan suit you?"

"I shall be very glad to stay, Miss Mabel, if you think I can manage to do enough to pay you for the trouble," he said. "I dread so to go to Uncle Jared's, for I'm afraid, from what little I heard mother say of him, that he's a hard sort of man to get along with, but I didn't know where else to go."

"Well, then, it's settled. Come in, it's getting sunny out here," and rising, she went into the cool parlor, and sitting down, ran her fingers over the white keys. "Shall I sing for you, or don't you care for music?"

"Oh, yes, indeed, if you please?"

Seeing an old favorite on the music-rack, she sang in a sweet voice, to a plaintive accompaniment:

Some day I'll wander back again,
To where the old home stands,
Beneath the old tree down the lane,
Afar in other lands.

Its humble cot shall shelter me
From every care and pain,
And life be sweet as sweet can be,
When I am home again.

I'll wander back, yes, back again,
Where childhood's home may be,
For memory, in sweet refrain,
Still sings its praise to me.

Pausing, she saw Ray's head was bowed on his hand, as the memory of the home which was his no more came over him, and chiding

trouble to win a sweet smile from the one being on earth whom he regards as a guardian angel.

And so swiftly speed away the happy days of three short years. During the months of winter and spring, Ray attends the village academy, where he wins the approbation of both teachers and schoolmates, and makes rapid strides forward in his favorite studies.

Mabel still retains her position as teacher in the country school near her home, as their income is by no means colossal, though, since Ray has added his assistance and suggestions, it has been visibly increased rather than diminished, as Uncle Jim had so persistently prophesied on his early coming.

To Mabel, Ray seems to fill the place of a brother, and as such she regards him.

One afternoon Mabel had dismissed her school earlier than usual, and coming home an hour or so in advance of the usual time, heard the sound of her piano as she came up the walk. "Who can be here?" she thought, as she stopped in the porch to listen a moment. The keys were touched by no unskillful hand, and a tender voice of peculiar richness sang the sweet ballad of "Kathleen Aroon."

She listened, charmed, to the end, and stepping to the door, beheld Ray, who, hearing her step, looked around, and seeing her, rose quickly, while the rich blood colored his cheek.

"You bad boy," she said, "to be here all this time and not let me know you had such a delicious voice. Why, Ray, your voice is superb. It may make your fortune some day. Where did you ever learn to accompany it in that manner?"

"All my knowledge of instrumental music I owe to our old organist in the little church, but it is not much," he said.

"It is a considerable, and I shall expect you to do your share of making the music hereafter, sir. You throw all my poor efforts quite in the shade."

His heart beat rapidly. The words of praise were so sweet, coming from her, that it was all he could do to retain himself from expressing the love which filled his whole being. She would think it mere boyish admiration, perhaps, but it had in it the elements of endurance which would keep it intact through many long years of the future—years of sorrow for both.

CHAPTER II.

"Ray, did you get me a letter to-day?" asked Mabel, one bright, sunny afternoon as he came in, flushed from his rapid walk.

"Why? Did you particularly expect one to-day?"

"Certainly. Let me have it, please," and she held out her hand with an eager look.

"Here it is," and he held it up above her reach, as she stood on tiptoes to grasp it, her dimpled arms, from which the loose sleeve had fallen back, stretched above her head, showing her supple form in all its curves of beauty. "You haven't paid me yet for bringing it," said Ray, as he held it just out of reach of the white fingers.

"What shall I give you—a Yaukee sixpence?" and she threw him a kiss from the tips of her fingers, as he dropped the letter into her hands.

"Yes, that will do for this time," and he watched her eagerly tear open the envelope and devour its contents, and he wondered what they could be as he saw the red flush mount to her cheek and brow.

Ah, Ray, the dark days are coming when your young heart will have learned the bitter lesson of sorrow and endurance which must come to us all.

"I am coming to you, darling Mabel," the letter reads, "when the maples are tinged with red, and our old trysting-place in the grove strewn with the bright-hued leaves of October. I will be with you, never to leave you again, I trust, till you are my own forever. When again I go, I must take my darling wife with me. Your true lover,

"HARRY VANE."

Seated in the hammock, idly swaying to and fro, her mind was a mass of chaotic thought. She had hardly expected just this news in her letter. Harry had certainly meant to stay on where he was yet another year. What could have occurred to make such a change in his plans? Of course, she would be glad to see him. She had expected he would make her a short visit, but to be prepared to leave her home on such short notice. It had been a long time, too, since she had seen him, that young lover of hers, and the bright day they had plighted their vows under the maples so far back in the past. It seemed almost like some half-forgotten dream, and yet it had made her very happy.

When he had left her to complete his study of law, she had been so desolate and felt that life had lost all its brightness till he could come to her again; but of late she had not seemed to miss him so much. Life had been so much pleasanter since Ray had been there. He was such an intelligent companion and seemed to understand all her thoughts and feelings and anticipate her wishes almost before they were expressed. Indeed, she fancied she loved him as well as if he had been in truth the brother she tried to think him. But she would be glad to see Harry, and he and



Missa Avis married, were her portion, and when the proclamation went forth giving them their freedom they refused to leave her, and in her changed fortunes, shattered by war's desolating power, came with her to the North, and with what was left, succeeded in making a comfortable living for her and the little Mabel. Uncle Jim was sole manager of the small farm which was all that remained of their once ample fortune, and he managed to make a comfortable living with the help of Aunt Chloe, but he was getting old and lame, and felt the need of younger help.

Mabel seated herself in the hammock strung across the farther end of the veranda, and taking off her hat, fauned herself with its broad brim, as she drew from Ray his story, and tears of pity filled her eyes at its sad tenor. As she talked to him she was pleased to see his face brighten into new beauty, and noted the refined, intelligent expression which shone forth in his dark eyes.

"How old are you, Ray?" she asked.

"I am past eighteen, Miss Mabel."

"Indeed! I did not think you could be so old. Well, I'll tell you: If you think you could be content to stay with us for awhile, I think, perhaps, we could manage it. Of course, Aunt Chloe pretends to defer to me, but I am sure she has settled it in her own mind that you will stay and give Uncle Jim a little assistance, which she insists he must have, and I suppose he is getting too old to have all the steps to take, even though our domain is not very widespread. You were intending to go to school, you said, I think, but perhaps you can get some time to study, odd hours and evenings through the summer and

herself for thoughtlessly bringing his sorrow up afresh, struck into the lively air of "Twickenham Ferry," whose merry notes soon banished the sadness from his brow. After a few more gay selections, she rose, and, taking her hat, said, as she passed out the door:

"Come and get acquainted with your new home."

Putting on his hat, he followed her down the path through the primly-kept garden to the fragrant orchard, where they succeeded in finding apples large, yellow and juicy, and more to Ray's liking than those with which he had endeavored to satisfy his appetite earlier in the day. From there they passed to the barn and outbuildings, Uncle Jim's especial domain, where Ray was introduced to that worthy, who eyed him with evident suspicion, as some "poo' white trash, who'd dun tuk in Miss Mabel, shua. One more mouf to find vittals fer," he muttered to Aunt Chloe, on his return to the house, which she answered with a vigorous, "Sho, now; guess he'll airn 'em all, ef you's gwine to boss him 'roun'."

And so, Ray Ventnor finds a home, and as the days pass away, seems to be perfectly content and happy.

He spends the days helping around the farm, and by his diligence and faithfulness, wins golden opinions from Uncle Jim, who thinks him invaluable, and Aunt Chloe declares she "couldn't git along 'thout him, no way."

His evenings are all spent in study, and so diligent is he that Mabel says he will soon be beyond her help, which praise is music to his heart, coming from her. Her "well done" is a greater incentive to him to excel than anything else could be, and he would go to any

Ray would be such friends, and after they were married, they could do so much more for Ray. He could study law with Harry, and having arranged it all to her mind, she went in search of Ray, whom she found helping Aunt Chloe capture a refractory biddy, which, with her fluffy brood, had taken possession of the garden.

"Shoo!" Cl'ar right out ob heah; you'se got no bisnlss in heah 'moug my 'materses and cabbige," and shaking her ample apron, Aunt Chloe soon brought the truants into subjection while Ray popped the coop over their heads.

Resting her arms on the fence, Mabel watched the operation. How tall Ray had grown, and of late she had seemed to lose her role of teacher and assume rather the attitude of pupil. He had such a mnsterful, self-confident way of deciding all knotty points, and could not be satisfied with a mere superficial knowledge of whatever he attempted to learn. He must know all the whys and wherefores and delve to the bottom, ere he would be content to leave his subject for another.

She was beginning to look up to him as an authority on whatever branches he had mastered, though she was one year his senior, and to feel a restful confidence in him, that whatever hlsaim, he would be sure to reach it nt lnt, and well satisfied that his ambition would never be content to rest on lowly heights.

She wondered how the study of the law would strike him. Not very fivorably, she feared, for his tastes seemed to take an artistic turn. He had a passion for drawing and for music, and in each of these pursuits he had shown decided talent. Many sketches he had taken of the familiar scenes of beauty around their home, and his voice, which had astonished her by its sweetness when she had first heard it, had developed luto a rich tenor of great scope and power.

If he could only have proper training in either of these favorite pursuits, he would make his influence felt in the artistic world. If he decided on a different path, these natural gifts would add a softened beauty to the harsher details of life. He had always seemed possessed with such a determination to excel in whatever she encouraged him to do, and had such a high standard of moral worth, that she had grown to feel the restful powers of his presence, and to look to him for advice in whatever perplexed or troubled her.

How she dreaded to tell him of Harry's coming, and, yet, it must be done. Seeing her regard him with such an earnest, far-seeing gaze, he came up to the fence and, resting his dark eyes on her with a look of inquiry, waited to hear her errand.

"Are you busy, now, Ray? If not, can you spare me a half hour or so? I have something I wish to tell you."

"Certainly. Where shall we go to confessional? If I am to be priest, let it be in some shady corner, for housing Aunt Chloe's biddies is rather warm work on such a hot day," and springing over the fence, he walked by her side down the path to the maple grove, whose leafy verdure was in the full height of its summertime glory.

Unconsciously, Mabel's steps turn to the rude seat of knarled branches Harry had fashioned so long ago, and his words came to her with a new significance as she seated herself and looked up at the leafy cover, through which came little flecks of sunshine.

When the bright tints of October had changed them to glowing beauty he would come, and she felt it was far too soon. Silently she sat and mused, until Ray recalled her wandering thoughts.

"I thought you wanted to confess some terrible misdeed, or ask my advice on some important subject," he said, as bending down he gazed quizzically into her face.

"Yes, I do; but I hardly know how to begin. Have you ever heard me speak of Harry Vane, Ray?"

"Never, to my knowledge."

"I ought to have done so long ago, but somehow there never seemed to be any proper opportunity. I shall have to begin at the beginning or you will never understand how it all came about."

"Long ago, it seems very long now, about a year after mamma died, and before you came here, Ray, I became acquainted with Mr. Harry Vane, a young law student of Hamilton. He was spending his summer vacation here at the village with a relative, and there I became acquainted with him. I was so very lonely without mamma, and so desolate, that I welcomed any diversion, and when Irma Vane urged me so persistently to make them a visit of a few weeks, I could not resist the temptation. I saw him many times after I returned home, and the end of it all was—the end usually described in all the love stories you read, 'He came, he saw and he conquered.' When he left it was with my promise to become his wife at some future day, when he should have completed his studies. Since then we have corresponded regularly and I some expected a visit from him this fall, but he writes me he shall expect to take me with him when he leaves. It is so unexpected, Ray. What shall I do about it? Why don't you tell me?" she said, as the silence remained unbroken.

He sat with his head on his hand, his eyes bent persistently on the ground, but she could see the glow of color had left the clear cheek and his lips were tightly pressed together, as if to repress any words he might afterward regret to have uttered. As she waited for a reply, he raised his eyes to hers. There was no mistaking the deep look of sorrow with which he regarded her, and he seemed to be striving to read her every thought.

Nervously she sat, her slender fingers twisting themselves together in her lap as she waited some expression of his feelings in words.

"I cannot see what advice you expect or

need, Mabel," he said, at last. "You have settled the matter, it seems, and all that remains for me is to wish you the truest happiness and joy in the life you have chosen. I hope he is worthy the love and trust you have given him and will make my little sister very happy," he continued, taking her hands and holding them in a close pressure. "If he is, and is the choice of your heart, all is well, is it not?"

He looked with earnest questioning into her eyes, and, rising, left her with a mute pressure of the hands. Not for a moment longer could he retain his brotherly kindness of manner, and the secret of his love for her must now be buried deep in his own heart. She had made her choice and not a word would he utter to disturb the pleasant relations that existed between them. If she gave no sign that he held a dearer place in her heart than she could give to a brother, she should never know the deep and tender love his own heart felt for her—a far deeper love than a sister could claim, and which had been the mainspring of his life and actions for the three happy years of the past.

Well, they were over now, and he must be alone to work out this new life problem in solitude. Going hastily to his room, he seated himself by the window to turn the matter over in his mind and decide on his future course of action. Could he endure to stay on after the old fashion, and see Mabel's love and devotion given to another? And yet it would never do to leave her so abruptly. His very haste would tell the tale he wished to hide in his own breast. How hard he had striven to excel, and make himself worthy to ask for her love. Long he sat there and hardly contested was the battle between his great love and his sense of right, but when Aunt Chloe came to call him to supper, it was with a calm demeanor he descended and joined Mabel.

She, too, had been busily thinking, and her thoughts were not all pleasant ones, for the tears would come and drop slowly down, one by one, till chiding herself for the ridiculousness of the thing, she jumped up and started for the house.

"One would think I was sorry to see Harry," she said to herself. "I ought to be ashamed of myself, so good as he has been, too."

Nothing more passed between them on the subject that held so great a place in their thoughts for a long time, but Mabel did not make any preparations for immediate departure. Indeed, she wrote to Harry that she couldn't possibly be ready on such short notice, and that he must compromise matters by giving her a little more time, to which he replied that it would be impossible, as his arrangements were all made and could not very well be altered.

The undecided state of her mind was beginning to tell on her health, and the blush-rose tint of her cheeks was giving way to the paler hue of the mossrose. She had lost much of her old vivacious manner, and the pleasant social hours she was once so glad to spend with Ray were things of the past. Indeed, she rather seemed to avoid him. The knowledge sent a pang to his heart, but he seemed not to remark it, and strove to be his old, genial self when he was with her.

"I do wonder what kin be worritin' de poo' chile," Aunt Chloe said, one morning, when Mabel had left her breakfast almost untasted. "I s'pect she's gwine to hab a fevah. I'll dun gib her a good dose ob boneset tea when she goes to bed; it's pow'ful good fer de dumps. I allers gibs it to de ole man, an' it fatches 'im out right peart."

Ray laughed as he advised her not to try it on Mabel, as he didn't think it would reach her case. Things were in this unsatisfactory condition, when one evening, as Ray came in from his outdoor duties, he paused by Mabel, who sat partially screened by the fragrant jasmine sprays.

"Can you spare a little time for me this evening, little sister?" and his voice lingered with a loving cadence on the last word. "I wish to tell you of some plans I have made for the future, and see if they meet your approval."

"Certainly; I shall be glad to hear."

He sat down by her side, and taking the little hand in his, as in the olden days, told her of a gentleman he had met that day at the village who wanted to secure an assistant for a surveying tour to be taken in the interest of Granby & Wells, away in the mining regions of northern Michigan.

"The pay is good, and I have a sufficient knowledge of geometry, I think, to undertake it. You know I must get a start, Mabel," he said, "and it may be a long time before so good an opportunity occurs again. You will be going away so soon, now, you will not miss me long, and I have found a strong young fellow to come and help Uncle Jim. Tell me what you think of it, please?"

"I don't know as I have any right to raise objections, Ray. As you say, you have your own work to plan, and my objections would have but little weight against your inclinations."

"My inclination, as you call it, would lead me to stay with you, little sister, but you will not need me much longer. It is you who first proposed leaving our home. You know I could not stay on here, after you are gone, beside your—you would probably decide to break up the old home entirely. Look at it in its true light, Mabel. As long as you need me, I am more than willing to add to your comfort and happiness, every way possible."

"Why cannot you stay on, then, just as if you were my brother in truth, even if some one else does care for me?"

Why, indeed? As he watches the sweet, tearful face raised to his the temptation is almost too strong to tell her the true reason, and let her decide whether he shall go or stay. But, no; though she dreads to have him leave her, and break up old associations, she has given him no evidence that her heart's best love is not given to another, and he will not speak. He must forget, and to do that means to put the safeguard of space between them.

"Will you not bid me God-speed?" he said, as taking her hands in his, he held them tightly. "You can never know the pain it gives me to leave you and this pleasant home where we have been so happy—but it is best."

Conquering her emotion, she raised her eyes to his.

"Yes, Ray, if you feel it is best. And may all prosperity and happiness be yours. You will not quite forget me?"

"Forget you?" and involuntarily he drew her closer to him. "You know that will never be. No other will ever occupy your place in my heart, dear little sister," and bending his head to hers, he pressed a kiss on her lips.

"It is getting late, Ray, we must go in," she said, as she drew her hands away from him.

With a low good-night, he turned and left her, but she still lingered, apparently forgetting the lateness of the hour, and stifled sobs shook the slender frame.

"He is glad to go," she thought. "He is eager for a change, and I, and my small hopes and fears are nothing to him now. How

changed he is; he doesn't seem like the Ray of a few short weeks ago. Well, he shall not know how great a grief it is to lose him."

How frail the barrier of misunderstanding that so often separates two loving hearts. How apt we are in supplying motives for every act of those we love, and how far astray our petty jealousies and selfish fears often lead us from the truth.

Meantime, the preparations for Ray's departure went on rapidly, as Mr. Soule was to leave in a week. Great were the lamentations of Uncle Jim and Aunt Chloe when they found they were to lose their favorite.

"Jis' like all de young folks. Soon's ebber dey's big nuff to alrn der salt, dey's up'n off. 'Spec's Miss Mabel be gittin' too big fer de ole place 'fore long."

Mabel bravely kept her regrets locked in her own heart, and was very kind and gentle to Ray in these last days, but after the good-bay had been spoken, and she found herself free to act her feelings, she drooped so visibly as to alarm Aunt Chloe, and one morning she found her unable to rise, her cheeks scarlet with fever, and talking rapidly to herself in disconnected sentences.

"See the leaves, Aunt Chloe, all bright red and yellow. It's too soon, too soon. Take them away, they make my eyes ache so. I know you had to go, Ray, but it is so lonely. Ah, those leaves, how they come dropping down on me so fast. They will cover me up. Take them away, won't you?" she called, shrilly.

"Yes, yes, honey. Aunty'll tote 'em all way, jist yo' shet yo' eyes and go to sleep," and pressing a napkin wet in cool water over the hot eyelids and throbbing brow, she hurried downstairs and hurried Uncle Jim off after the doctor with all possible speed.

"Mind yo' don't let no grass grow under yo' feet, ole man," were her parting words, as she went back to Mabel, whose side she never left for many a weary day, save for necessary food and articles needed, taking what rest she could snatch on a low cot at the foot of the bed.

"Typhoid fever," was the doctor's dread verdict, and slowly now the sick girl talked in a confused way, of the scenes that ran riot in her fevered brain. Wearily, for the fierce fever had well nigh burned the life from the dark stream coursing so rapidly through her veins. She was growing very weak now, and the dread of the bright autumn leaves was great as when first she was taken, and ran like a sad refrain through all her babblings.

One day, when Aunt Chloe had left her for a few minutes to prepare some beef tea, a rap called her to the door, and opening it, she saw Mr. Harry Vane, whom she had not forgotten. He had never been a favorite of hers, and she regarded him with suspicious looks, and in reply to a request to see Miss Mabel, said curtly:

"No, sah, yo' can't see her. She's dun got de tifoid fevah, and de doctah tole me not to let nobuddy come nigh what'll ixcite her."

"Oh, that explains why I have not heard from her in so long."

"Mebbe so; she aint writ no letters thls long spell."

"I must see her, if only for a moment. I promise you not to excite her," he said, but Aunt Chloe was obdurate and he was obliged to be content with the promise to see her in the morning, if she was more quiet, and so took his leave.

Early next day he called, and as Aunt Chloe led him to Mabel's room, he was shocked to see the change her illness had made. She lay quiet this morning, a wet handkerchief covering the head from which the soft, wavy curls had been cut away, the pale cheeks, hollow and sunken, the eyes closed, and the wasted hands crossed on her breast, as if in her last, long sleep.

Could this be his pretty Mabel of whose wild-rose beauty he had been so proud? He could not realize it, and sat down where he could watch her and be himself unuseful. Suddenly she opened her eyes.

"Ray, Ray," she called, shrilly, "I want you to get me some of those great, white roses, quick, they are so fresh and sweet. There they are, such heaps of them, and all white, pure and cool—not red, burning red. The leaves are red—hateful red and yellow—and they come dropping down on me so fast they choke me. See, they have covered me almost up," she said, and she pointed to the white bed cover. "Oh, I forgot. He's gone and I'm so lonely."

Her eyes were roving around the room excitedly, and Aunt Chloe interposed her portly figure between the bed and visitor, as she motioned him to leave the room. Soon the eyelids drooped, and she was again in a stupor, and following him out, Aunt Chloe found him standing just outside the door, waiting for her.

"I tole yo' 'twould be jist dat way. She can't har fer no one to be in dar 'cept me," she said. "It's terrible to see her like that. Is there any hope?"

"De doctah ses as how she'll pull froo, mebbe, wid good nursin', and I cal'late she'll git dat."

"Who is the Ray she calls so much?"

"Oh, dat's her 'dopted brudder. He's gone away, now. Went jist 'fore Miss Mabel was tuk sick. He'd feel pow'ful bad to know how bad de pore chile is. He 'toun't a pow'ful heap ob Miss Mabel. Yo' kin find yo' way down well nuff," and she went back to her patient.

He passed on down the staircase, and as he passed the open parlor door, his eyes fell on a cabinet photograph, which occupied an easel on the parlor table. Stepping in, he took it in his hand and gazed long and earnestly at it. The dark eyes, full of conscious power, looked back into his. The broad, white brow showed the possession of a rare intelligence, and the firm mouth, shaded by a silky mustache, indicated a nature noble and firm in high resolves. At the bottom was written: "Ever yours, Ray Ventnor." Near by lay a parcel of unopened letters, directed to Mabel, which had accumulated during her illness, and reading the addresses one by one, he came on two of his own, and several in a clear-cut, masculine hand.

"From 'Brother Ray,' no doubt," he thought, and with a sudden jealous pang, he thrust them into his pocket. "I guess it's just as well that she doesn't see these. I thought there was some explanation of the cool manner in which she has treated me of late," he said to himself, as he passed out and closed the door.

CHAPTER III.

Three months have passed slowly away since the visit of Mr. Vane. Mabel sits by the bright, wood fire, for the days are chilly now, and she is still feeble, though the soft glow of returning health is beginning to show faintly on her cheeks. Her head is covered with a short growth of crinkly fuzz, which promises, in time, to replace the wavy crown of which she was shorn. Sorrowful events have followed each other rapidly, in the last few months. First, Ray's departure, then her own

dangerous illness, and just as she was considered out of danger, poor Uncle Jim had succumbed to the terrible fever, and his poor, worn-out frame made but a feeble resistance to its terrible advances. In two short weeks they had laid him away to rest in the quiet churchyard, and they were left alone, she and poor Aunt Chloe, who seemed lost without her "ole mau."

During the long days of convalescence, Mabel had thought much and deeply. She better understood her own feelings now, and the cause of the strange unrest which had filled her being, and when at last she was able to meet Harry, she told him as gently as might be, the change that had taken place in her own heart. The love she had felt for him was but a girl's romantic fancy, and not the deep, true love that should fill her whole being if she were to be his wife. He had refused to release her at first, but she remained firm, and he had at last left her in anger, with the taunt that probably "Brother Ray" might know something of the change in her feelings.

The hot blushes burned in her cheeks as she recalled it and wondered where he was, and if he had quite forgotten her. Not a word had she heard from him since he had left her, though she had sent to the office many times, but always in vain. Two or three letters were given her by Aunt Chloe when she got able to read, but none from him, and she had given up hope now.

Perhaps they would never meet again, for in the spring they were going to leave the old home, she and Aunt Chloe, and go back to her childhood's home away in Tennessee. Her mother's sister lived there still, and wished her to come and take the place of the daughter she had lost and missed so sadly, and they had decided to go. They were only waiting to sell the farm, or arrange matters in some satisfactory manner.

A large, commodious dwelling in the distant suburbs of Memphis. Wide verandas surrounded it on all sides, onto which open the narrow, French windows. They are all open now, as if to woo the cool breeze which has sprung up, and which floats softly in, laden with the perfumed breath of the great, odorless magnolia blossoms. Sweet and refreshing it seems to the weary invalid just escaped from the fierce clutches of "Yellow Jack." Hotly contested was the battle, but a naturally good constitution, aided and abetted by the united efforts of old Aunt Chloe and Mabel, have combined to gain the victory, and Ray Ventnor is once more on the royal road to health.

Aunt Chloe, on one of her trips to the city, had recognized him as he was entering a hotel, and waddled home to Mabel with the news. Forgetting the long years of silence between them, and thinking only of the olden days when they were so dear to each other, she lost no time in going to him the next day, but found an earlier visitor had been there. He had been suddenly taken ill with what the physician feared was an attack of yellow fever, which had been epidemic, but had disappeared from the city, and she insisted on having him conveyed to her home, a former attack having rendered the inmates unlikely to absorb the poison.

He is out of danger now, and all the old misunderstandings and silence have been explained, together with the true and fervent love each had felt compelled to hide deep in the recesses of their own hearts, and which had outlived all the weary pain of silence and separation. So sweet it is to Mabel to have him with her once more, and know that for them there is to be no more parting, and as Ray leans back among his luxurious pillows and watches the dear form with all its old-time grace flitting about, as she ministers to his comfort, his heart goes out in thanksgiving that he has found her at last—his heart's delight.

One puzzle they cannot solve, and that is, what became of the letters he had written to her while yet in her northern home. Many more he had sent to her during his wanderings, telling of the good fortune he had stumbled upon in locating a mining claim, which had proved to be a valuable investment, and which already yielded him an ample income. Then during the two years he had passed in school at St. Louis he had written again, with the same result, and becoming discouraged, had written to the postmaster, to find that she had long been gone, he knew not where. And now, ere he started on a trip to Germany to complete his musical education, he had determined to go himself to the old home and try to trace the dear little sister, never absent from his thoughts since he pressed a good-by kiss on the sweet lips so long ago, under the trailing jasmine.

"You will never find her now, Ray. Aint you sorry?"

"No," he whispered, as he drew the fair head down beside his own, "no; for, instead, I have found—my wife."

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Our Household.

THE BOTTOM DRAWER.

In the best chamber of the house,
Shut up in dim, uncertain light,
There stood an antique chest of drawers,
Of foreign wood, with brasses bright.
One morn a woman frail and gray
Stepped totteringly across the floor—
"Let in," said she, "the light of day—
Then, Jean, unlock the bottom drawer!"

The girl, in all youth's loveliness,
Knelt down with eager, curious face;
Perchance she dreamt of Indian silks,
Of jewels, and of rare old lace.
But when the summer sunshine fell
Upon the treasures hoarded there,
The tears rushed to her tender eyes,
Her heart was solemn as a prayer.

"Dear grandmamma!" she softly sigh'd,
Lifting a withered rose and palm;
But on the elder face was naught
But sweet content and peaceful calm.
Leaning upon her staff, she gazed
Upon a baby's half-worn shoe;
A little frock of finest lawn;
A hat with tiny bows of blue—

A ball made fifty years ago;
A little glove; a tass'd cap;
A half-done long division sum;
Some school-books fasten'd with a strap.
She touch'd them all with trembling lips—
"How much," she said, "the heart can bear.
Ah, Jean! I thought that I should die
The day that first I laid them there.

"But now it seems so good to know
That all throughout these weary years
Their hearts have been untouch'd by grief,
Their eyes have been unstained by tears.
Dear Jean, we see with clearer sight,
When earthly love is almost o'er;
Those children wait me in the skies,
For whom I lock'd that sacred drawer."

—Mary A. Barr.

HOME TOPICS.

ORANGE PUDDING.—Talking about puddings one day, Sophie said, "Mamma makes the best orange pudding I ever ate."

"Will you write and get the recipe for me?"

"I will try and not forget it the next time I write," was the reply.

In a little while a letter came from far-away Kansas, bringing this recipe to me, and I hasten to give it to our FARM AND FIRESIDE readers, hoping they will agree with Sophie as to its excellence. I made it for dessert to-day, doubling the recipe, as my family is large, and all pronounced it good. If the "proof of the pudding" is in its being all eaten, it was certainly proved good. Peel three large oranges, cut them in thin slices, removing the seeds. Put them in a pudding-dish and sprinkle over them one teaspoonful of sugar. Beat the yolks of two eggs with one tablespoonful of corn starch and two of sugar. Add a quarter teaspoonful of salt and stir it into a pint of boiling milk. As soon as it thickens, remove it from the fire, and when it is cool, spread it over the oranges. Beat the whites of the eggs to a stiff froth with two heaping tablespoonfuls of powdered sugar; put it over the top of the pudding and brown it very slightly in a hot oven. Serve cold.

DON'T TURN THEM OFF.—An idea that used to be prevalent and has not now, I fear, become wholly obsolete, is that the children must be "turned off" and the housework given the preference, if the mother has not time enough for both. Too often the mother of little children turns them away when they most need her mothering care, because her household cares press and she fears the criticisms of her neighbors, or perhaps of her own husband, if her house is not kept in perfect order, the clothing of the family immaculate and the meals served with promptness, and the usual abundance and variety of food prepared. Sometime, I hope, the sacred duties of motherhood will be more fully realized, and in some way mothers be exempted from most of the drudgery and care of housekeeping while little children claim her care; then her best thought can be devoted to them, and the holy office of motherhood held of more account than housework, dress, society or the accumulation of wealth.

Some one has compared the work of the mother to that of the sculptor, but while the sculptor may begin to carve a statue

one day, he can leave his work for months or years neglected, and then taking it up again, bring it to the thing of beauty he first designed. Not so the mother; if she neglects her work for a time, other influences are fashioning it, and its beauty and symmetry may be destroyed forever.

No young woman who shrinks from the cares and responsibilities of motherhood or who does not do everything in her power to fit herself for them, has a right to assume the duties of wifehood.

I know a mother who has reared to a pure, true-hearted, young womanhood and manhood four sons and three daughters. While they were little children her time and strength were all given to them. Help for the household work was provided, although no money was put in bank, and sometimes even debt was assumed. Society's claims were put aside if they interfered with mother-duties. Her life seemed to be almost wholly given up to the children. She was their friend and playmate. She kept herself young in spirit and ever ready to be their confidant and adviser. The mother who never turned a deaf ear to their little, childish trials was made the confidant of the big boys and girls. When she looks at them now do you think she regrets that she gave those years of her life to their care and training? The years did not seem long, and now all have grown beyond the need of this constant care. She has again taken up studies and work that she laid down for them.

In a letter received from her a short time ago, she says: "I have been painting some this winter, and picking up my music again. The children say, 'Now, mother must have her good time,' but I tell them I have had it all along."

MAIDA McL.

WORK-BASKET ON EASEL.

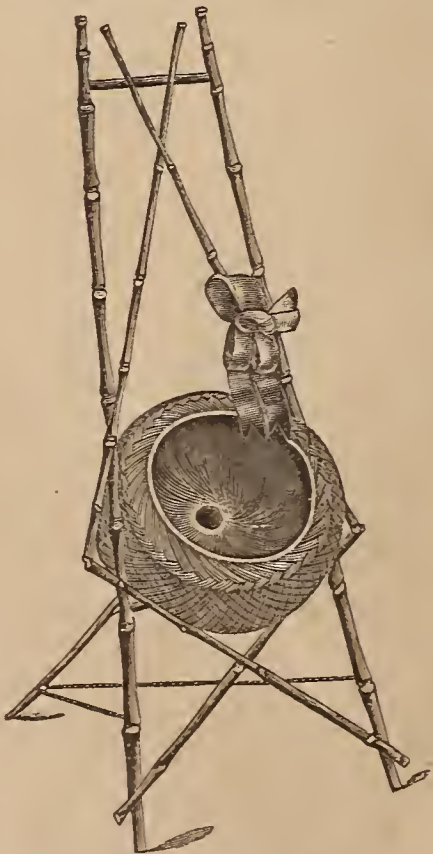
"Here is just what you want, wife. Isn't it a beauty?"

I turned to look at the catalogue my husband was looking over, and found the picture referred to that of a beautiful work-basket on easel.

"It certainly is lovely, John, and would be just the thing for that bare-looking corner near the sewing-machine, but look at the price, \$4.50."

"Never mind the price, what I wish to know is, do you want one?"

"Now don't be foolish, John, and squander so much money for just a work-basket. Why, I can get a basket like that without the easel for 50 cents, and have



WORK-BASKET ON EASEL.

plenty of nice material to line it with, and although not so ornamental it will be quite as useful."

"All right, you get the basket," said John.

I had almost forgotten this conversation, when one day John came marching home with three bamboo fish-poles. On asking what in the name of common sense he wanted to do with fish-poles in the middle of winter, he replied he was going a fishing, and told me to get the basket

ready for the fish. I was not long in catching on to his meaning, so set to work fixing up my work-basket, and before evening I had the coveted "work-basket on easel" in my sitting-room, and it has proved so useful since that I can hardly get along without it. The poles were fastened (where they cross) with brass screws.

Without the basket, a very pretty easel for a picture can be made by simply adding a cross-bar of bamboo or picture molding for the picture to rest on. MILDRED.

FASHION HINTS.

The Empire gown will be worn again this season and without any modifications. Its simplicity and the clinging effect of the long folds make it the gown of all others for the statuesque, full-limbed beauty, but on a thin woman the effect is disastrous.

I saw one a few days since in yellow crepe de chine copied after a Felix model. It was made exactly like a baby's slip, except it had a small train and the neck was square cut, front and back. Ribbon of the



EMPIRE GOWN.

same color confined it above the waist, the ends falling in front to the edge of the gown. The sleeves were mere puffs. Slippers of yellow satin and gloves and fan of the same color completed an evening gown which shone with the brilliancy and clearness of new gold. The hair should be worn in a simple, Greek knot, a diadem—for these have been resurrected from the limbo of the past—sparkling above the brow. They are of gold, set with tiny brilliants or very small emeralds, rubies or sapphires.

In England, tea-jackets have taken the place of the elaborate tea-gowns for afternoon wear at home. They are extremely chic, but their chief beauty lies in the fact that they can be made in colors to match or contrast well with some pretty, half-worn skirt. With black silk or lace skirts, a jacket as shown in the illustration could be made in black and white or entirely of red. They are most striking with vest of cream or red, the jacket of a curiously woven Oriental texture.—*New York Herald.*

FLOWERS FOR THE AMATEUR.

The time is fast approaching when we are to decide whether or not we will cultivate flowers. When one thinks of the benefit derived from the lovely plants, there will surely be no doubt as to the decision. Besides, flowers have a refining influence over children, if the mother will but take time to point out the beautiful, curious or common individualities of the plants; she will also find that she is being educated and benefited quite as much as the children are. Do try, then, to have a few flowers.

Perhaps, you do not feel able to invest very much money in seeds; let me tell you, then, that there is one perfectly reliable seedsman who sells seed in packets containing mixtures of many kinds and varieties. So that, for the small sum of ten cents, one may have pansies, snapdragon, daisies, pinks, calliopsis, gillias, poppies and dozens of other plants. Or, why not buy a "collection?" There are many such put up now, by reliable seedsman, who advertise in these columns. These collections range in price from ten cents up. Before

me, as I write, is an offer of eleven packets of seeds for twenty-five cents; all are seeds which any amateur may grow without trouble.

Asters are very easily grown and are among the most desirable of our fall-blooming plants. They are very easily transplanted; indeed, they may be taken up when in bloom and planted in boxes, if one is careful to take up plenty of soil so as not to disturb the roots.

Balsams, if you know only the old-fashioned touch-me-not, you can have no idea of the beauty of this flower. Plant the seeds about five inches apart, if the seeds are to remain where planted, which is really the best plan. When a foot high, pinch out the terminal buds; this makes them more compact. Just before they bloom, pick off most of the leaves, or enough to let the flowers have a chance for display.

Calliopsis is an indispensable flower. Better divide the packet of seed, sowing half of it in May and the remaining seed in July.

Phlox drummondii is without a rival in the garden. Here, too, pinching out the tips of the branches is very beneficial to the shape of the plant. Do not sow the seed too thickly; give each plant an opportunity to display its own individuality.

Pansies are favorites with every one. They like a partially shaded situation. They will endure the morning sun, but the afternoon sun is no advantage to them. If you would have them bloom constantly, keep the seed vessels from forming, and an occasional pruning will help them. Give them a deep, rich soil, and water at least once a week with manure water.

Verbenas do not bloom until late in the summer. Sow the seed, and when four or five leaves are formed, transplant to about two feet apart.

Zinnias are so improved as to rival (almost) dahlias. As they are not particular about soil or location, any one can grow them, and drouth is really a friend of theirs. The other plant listed is not so common, but the collection will surely suit any amateur, and I know the seeds are good, as I have had dealings with the firm. Should you want more than I have named, you will not be limited. Your collection should by all means include Tom Thumb nasturtiums. These were once grown only for pickles, now they have no rival in the flower garden. A packet of mixed seed will produce pearl, rose, yellow, yellow-striped, crimson and scarlet colors. And they will bloom the entire summer.

Then you should try dianthus (pinks). A packet of mixed seeds of this will give you more flowers than you will know what to do with; there will be single and double—the double flowers are as fine as any choice carnations. You will probably have from thirty to fifty different varieties from the



TEA-JACKET.

one little packet of seed. When they show signs of ceasing to bloom, cut them off to about four inches from the ground with a sharp pair of scissors. They will soon begin to bloom again and will continue in bloom until snow hides them; a coating of leaves should be given them in the fall.

Then, how can we do without sweet

peas? Those beautiful, sweet-scented flowers. They should be planted about six inches apart and be given a strong support to climb over.

Then there is antirrhinum. The dwarf kind is best; it is to be had in the loveliest shades and it blooms so freely. It is one of the best flowers to combine with sweet peas in the forming of bouquets. If given protection, it will bloom the second year even better than the first.

If I could have but four varieties of flowers I would select nasturtiums, sweet peas, dianthus and antirrhinum.

The amateur will be wise if she selects packets containing mixed colors of any flower seed.

The rock on which so many amateur florists' hopes are wrecked is the preparation of the soil. The soil should be spaded to the depth of a foot and finely pulverized. Then don't be in a great hurry to plant your seed. When the wise farmer plants his corn you may safely plant your flower seeds; from the first to the fifteenth of May is a good time. Coarse seed should be planted an inch or so deep, while fine seed are just sown on top of the soil, with a sprinkling of dirt over them. All beds containing fine seed should be covered with pieces of carpet, cloth, paper or brush to protect them from too much sunlight, drying winds and showers; when they are up, raise the protection a short time each day until they have made a strong growth, when the protection may be abandoned.

For digging round plants there is nothing better than a four-tined table-fork. Most plants do better in a moderately rich soil; some require a very rich soil, while others want but little fertilizing. Study the wants and nature of your plants, if you would be successful.

Give your flowers attention and care, and they will repay you in more ways than one. Just try it. ELZA RENAN.

KNITTED EDGING.

First row—Cast on ten, slip one, knit two, cotton forward, knit two together, cotton twice over the pin, knit two together, knit three.

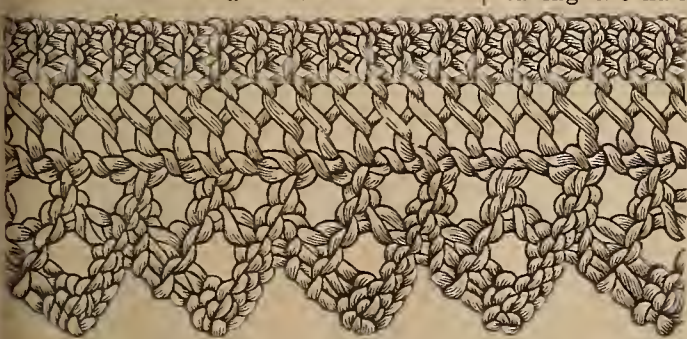
Second row—Slip one, knit four, cotton forward, knit two together, cotton forward, knit two together, knit two.

Third row—Slip one, knit two, cotton forward, knit two together, knit six.

Fourth row—Slip one, knit six, cotton forward, knit two together, knit two.

Fifth row—Slip one, knit two, cotton forward, knit two together, cotton twice over the pin, knit two together, knit one, cotton twice over the pin, knit two together, knit one.

Sixth row—Slip one, knit two, cotton forward, knit two together, knit two, cotton forward, knit two together, cotton forward, knit two together, knit two.



KNITTED EDGING.

Seventh row—Slip one, knit two, cotton forward, knit two together, knit eight.

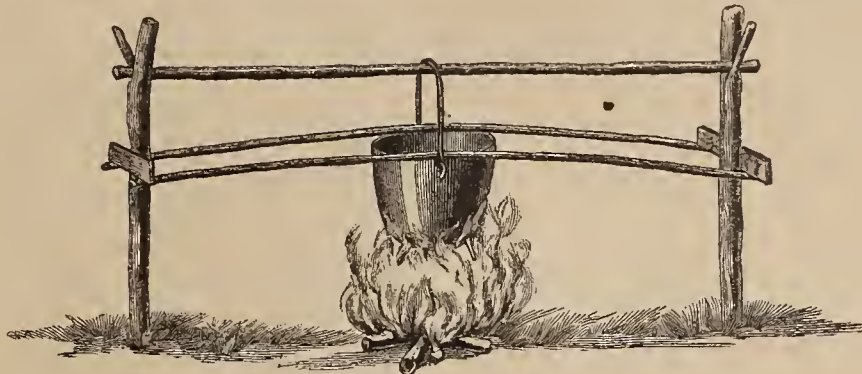
Eighth row—Cast off three, knit five, cotton forward, knit two together, knit two.

PIE-PLANT.

When the frost is well out of the ground in the spring, you may begin to think of forcing the pie-plant into an early start. Take an old harrel that has lost both heads, saw it apart crosswise through the middle, so you have two half barrels; turn one of these over the pie-plant root, and hank around it half way up with straw horse manure. Over the top of the barrel place an old window sash. You will have a cheap hot-house that will soon force the bulbs to make their appearance. When all danger of frost is over, remove the sash.

A DELICIOUS PUDDING.—One cup of sour

milk and cream, equal parts, one half teaspoonful of salt, one teaspoonful of soda, and enough flour to make a thin biscuit dough; and divide into three equal parts. Butter a quart basin, roll out one part of the dough and lay in the bottom of the dish, slice in a thick layer of pie-plant, sprinkle with sugar and a very little salt. Put on another layer of dough and then the seasoned pie-plant, and then cover with the last layer of dough. Place the basin in a covered steamer over a kettle of boiling water, and steam one hour. To be served hot with a sauce of butter and sugar, creamed together, or cream and sugar, as preferred. Any of the kinds of berries may be used instead of pie-plant in this pudding, varying the quantity of



HANGING A KETTLE.

sugar as to the sourness of the berries. When, later in the season, the pie-plant gets sour, pour boiling water over it, then cut up and let stand a few minutes, then pour off the water. You will find it will not take near as much sweetening. A rich sauce is made by slicing a layer of pie-plant into a basin, then a layer of sugar, more pie-plant, another layer of sugar, and so on till the basin is full; then set it in the oven until cooked through. It is so much nicer than when boiled with water. A very little salt improves the flavor, also. A sliced lemon cooked with it will add to the flavor for some people. TOPSY.

HAIR DRESSING AND HATS.

There is to be no startling departure the coming season in the dressing of the hair. Any way and every way will be equally popular. The Psyche knot has fallen—and great was the fall thereof—into a broader knot lower down, which can be worn becomingly with turbans and walking hats. Those severe Alsatian braids pinned in a flat circle, with every hair geometrically correct, also prevail for the street. On a wet, windy day this is the most sensible coiffure, as the closely braided strands defy all attacks of the freaky weather to loosen them.

For the evening, there is the softly coiled Greek knot, a few, short, wavy locks escaping on the neck. Or the coil which is always graceful, exactly on the crown, leaving the hair above and below it to wave in natural lines.

Last but not least comes the "Potter roll." This is particularly becoming to women with narrow faces, as it extends in a soft framework just below the ears. The hair is rolled closely upward from the extreme ends till it lies horizontally above the nape of the neck. When pinned

securely, the ends of the coil gathered in at the sides and lying close to the head, it reaches from ear to ear, something of a crescent in shape. It is easiest arranged with hair reaching only to the shoulders, as the roll becomes bulky with hair too long and thick. Only a large hat looks well with it.

For a few years past steeple-topped hats and high bonnets have had things all their own way. In spite of the funny newspaper man and the singer of topical songs. Now we are to have a decided change. The very newest thing in hats is the quintessence of insignificance. It is flat, round, and except for its little, rolling brim resembles a saucer. More than that, it is trimmed with only a simple bow, and school-girlish streamers of narrow, velvet ribbon hang down behind. Are we returning to the flat headgear, which Beecher, speaking in defence of the much

abused high hat, said was a particular eyesore to him twenty years ago? For the present season, at least, although large and small hats will be worn, the high crown appears completely ousted. Small women will be sorry. But the men in the theaters will be glad.—*New York Herald.*

CONTRIBUTED RECIPES.

CREAM COOKIES.—

2 cups of sugar,
2 cups of sour cream,
2 eggs.

Beat thoroughly; sift with 2 cups of flour, 1 teaspoonful of salt and 2 teaspoonfuls of soda. Season with nutmeg or cinnamon and add enough flour to roll out. A soft dough for sugar cookies

is always best, if you wish them soft and spongy. Too much flour makes them hard. If the cream is too very thick, add a little sour milk or buttermilk to the recipe. But as there is no other shortening, the cream should be quite thick, as when ready to churn for butter. GYPSY.

FRITTERS.—

2 eggs and 1 full coffee-cup of sweet milk beaten thoroughly. Sift in 2 cups of flour with

½ teaspoonful of salt,
1 teaspoonful of soda,
2 teaspoonfuls of cream of tartar.

If the batter is not then thick enough to drop from off the spoon in clear chunks, add more flour until it will not string together in a stream when dropped from the spoon. Have ready a hot kettle of lard, and drop the batter into it by the spoonful and fry a light brown. Serve hot, with maple molasses as a dressing. GYPSY.

STEAMED GRAHAM BREAD.—

1 egg,
½ cup of New Orleans molasses,
2 cups of buttermilk,
2 teaspoonfuls of soda,
1 teaspoonful of salt.

Add graham flour until the batter is as thick as can be stirred with a spoon. Put in a buttered basin, and place in a covered steamer, over a kettle of boiling water, and steam for two hours. When done, if the loaf is set in the oven a few minutes, a thin crust will be formed over the top. If one has not sour milk or buttermilk, sweet milk can be used in its place by adding two teaspoonfuls of cream of tartar, with one of soda instead of the two spoonfuls of soda given in the recipe. GYPSY.

HANGING A KETTLE.

The above is a plan for hanging a kettle, which I have found very useful. The illustration shows it all so plain that explanation is unnecessary. The two slender poles passing through the bail should be placed near the ears of the kettle. Thus arranged, the kettle will be securely held. MRS. McM.

A GROWING TOWN.

DEAR SIR:—I saw the advertisement of Akron, Colorado, and determined to visit that city. I met at the depot, Charles Brock, of Cissna Park, Illinois. The Secretary of the Board of Trade also met us there, drove us over the town and to Rock Springs. We were shown the lots that the city are giving away; they are beautifully located on the edge of town, covered with a rich prairie grass. There are about 1,500 people in Akron, and they number among them some of the most hospitable people we ever met. Akron is going to grow, and the lots there are bound to be valuable, so we concluded we would take our chances with the big-hearted Akron people. I got two lots. Mr. Brock got a lot for himself, his son-in-law and for his two neighbors. Why shouldn't everybody have real estate in the West, where fortunes are so rapidly made in the increase of values. LEWIS T. P.

SUNDRY SUGGESTIONS.

Will you please correct a misprint occurring in my article in February 15, page 168 of the FARM AND FIRESIDE. It should have been holes in the bottom of pan like a steamer instead of strainer; those in my pan are more like a colander.

I would like to tell the readers of FARM AND FIRESIDE of a fluid I use in washing that is a great help. One pound of sal-soda, half a pound of lime and five quarts of water. Use one teaspoonful to a boiler of clothes.

The lady I obtained this recipe from soaked her clothes over night in cold water, wrung them out and put them in to boil without rubbing, and said they were clean, but I—like a great many others—cannot be satisfied without rubbing them a little, although I do not pretend to wash them clean.

Do not put clothes in until the water boils, then add the fluid and plenty of soap (I use King's soap). Boil from twenty minutes to half an hour; use plenty of water to suds them in and they will come out clean and white, for the fluid seems to bleach them. Wash your calico clothes in the boiling suds.

And right here let me say to young housekeepers, if you will keep a little beeswax tied up in a cloth to rub your flatirons with, you will find that even a white shirt to be done up will soon become a pleasant work. Well do I remember what sorry times I had with those dreadful white shirts, the first year of my housekeeping, until a friend suggested beeswax. But I must close, for I wish to write again some day. E. E.

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RENEW AT ONCE.

Our subscribers will oblige us very much, and save us time and trouble in keeping accounts, if they will be so kind and thoughtful as to renew at least two weeks before their time is out, and thus avoid missing a number. We cannot keep back numbers, because our subscription price is so low that we cannot afford to hunt up back numbers. The only way to avoid missing a number is to renew two weeks before your subscription expires.

Our Sunday Afternoon.

NIGHT UNTO NIGHT.

HE day hath speech for all, it tells the glory
And strength of its Creator, hour by hour;
But sweeter tones take up the endless story,
When night reveals the hiding of his power;
A deeper flush on the horizon glowing,
A softer shadow on the moss-grown sod,
And through the hush, the sound as of a going
Among the trees of God.
At his command, with splendor unabated
And eye undimmed, the warrior-sun goes down,
While the attendant cloudlets, new-created
In gold and purple, wait on his renown;
He bids the mighty hand of night discover
The starry legions, till, at his behest,
Arrayed in light where myriad worlds watch over
This one world in its rest!
The curtains of the twilight softly falling
Where the high hills their all-night vigils keep,
The fitful twitter of the bird recalling
The madrigals of morning 'ere they sleep;
The field flowers folded for the night securely,
The shadows borne like dreams o'er hill and dale,
All tell of mercies long since promised surely,
Of love that cannot fail.
All day his vast and marvelous creation
Declares his power and goodness undefiled,
Then having given its evening-time oblation
Sleeps at his footstool as a wearied child;
Amid the world his eye alone can number,
His watchful care sustaineth great and small;
And nightly, with a love that cannot slumber,
His rest enfoldeth all!

—Mary Rowles Jarvis.

A REASON FOR OUR UNFAITH.

Two correspondents address us on similar themes—one on Christian science, the other on faith cure. They both assume that we have made no investigation into these matters, that we write of them without knowledge, and they ask us to give them a patient and candid consideration. They are mistaken in their assumption. We have given them a candid consideration, and it required some patience to do so. And our conclusions are clear and well settled. We always mean to treat the believers in Christian science and in faith cure with respect; but their dogmas appear to us to be unphilosophical, unscientific and unscriptural.

Christian science assumes sometimes that matter is not real; that there is no reality but spirit; that God is perfect, and therefore painless; that when we are in God we are perfect, and therefore painless; wherefore, let the spirit of man be at one with the Spirit of God, and disease and pain, which are really in the spirit, not in the body, are at an end. Sometimes it assumes that the body, though real, is an emanation of the spirit, a shadow, so to speak, cast by the spirit, determined therefore wholly by the spirit: result, the same. Now, we do not believe this philosophy. It is idealism applied to medicine, and we do not believe in idealism. The body is a reality, and it is not an emanation of the spirit, but the organ of the spirit. It affects the spirit for good or for ill—this is the truth of materialism. It is affected by the spirit for good or for ill—this is the truth of idealism. But the doctrine that the body is not, or that it is an emanation of the spirit, we dismiss with the other doctrine that the spirit is not, or is an emanation of the body. And, dismissing it, we dismiss with it the whole brood which is hatched from it. Exit Christian science.

Faith cure assumes that faith consists in trusting everything to God; that faith is a passive virtue; that its song is, "Oh, to be nothing, nothing!" In the spiritual realm it says, Believe that you are saved, and you are saved; in the physical realm it says, Believe that you are cured, and you are cured. We disbelieve in it spiritually and physically. Moses believed in the faith cure when he said to the children of Israel: "Stand still and see the salvation of the Lord. The Lord shall fight for you, and ye shall hold your

peace." And the Lord repudiated faith cure when he replied: "Wherefore criest thou unto me? Speak unto the children of Israel, that they go forward." Faith cure says, "I have faith and thou hast works." St. James answers, "I will show them my faith by my works." Faith is not a passive, but an active virtue. In Noah it builds an ark and saves; in Abramam it goes into exile and saves; in Moses it leads a nation out of bondage and saves; in Joshua it commands armies and saves. Faith is always active, working, busy; it is intelligent, uses its brains, uses the means which God gives it. I show my faith in a physician by taking the medicine he gives me. I show my faith in God by taking the medicine he gives me. In malaria, the faith which takes quinine and prays is better, more spiritual, more scriptural faith, than the faith which takes no medicine and prays.

Both Christian science and faith cure assume that sickness and death are evils; we think them means to a higher good. But that opens too large a subject to be disposed of in a paragraph.

Decidedly, the influence of *The Christian Union* cannot be counted in favor of either Christian science or faith cure.—*Christian Union*.

LIVING BY FAITH.

"The more I live by simple faith," says Lady Maxwell, "the clearer is the witness for purity of heart." But this is not the feeling of most. It is, rather, the more I live by rapturous feelings, or emotion, the clearer is the witness for purity of heart. But it will be found in the end that living by faith—simple faith, naked faith—is the most satisfactory life. There are no grounds for doubt when simple faith reigns, while our emotions may mislead us, and often deceive us. If we trust to feelings, we may judge that we possess more piety than we really have, or we may conclude that we have less. It is possible for us, as Lady Maxwell says, to "feel becalmed on an ocean of redeeming love." There is a state where the child of faith pays little attention to the presence or absence of mere emotion. He has passed the rocky headlands of doubt, and has reached the open sea of infinite love, and the goodness of God to him beggars all description. Faith has become to him "the substance of things hoped for, and the evidence of things not seen." "Lord, give us such a faith as this!"—*Christian Witness*.

ARE YOU IN THE VINE?

I have seen a branch tied to a bleeding tree for the purpose of being engrafted into its wounded body, and that thus both might be one. Yet no incorporation had followed; there was no living union. Spring came singing, and with her fingers opened all the buds; and summer came with her dewy nights and sunny days, and brought out all the flowers; and brown autumn came to shake the trees and reap the fields, and with dances and mirth to hold the "harvest home;" but that unhappy branch bore no fruit, nor flower, nor even leaf. Just held on by dead clay and rotting cords, it stuck to the living tree, a withered and unsightly thing. So also is it with many who have a "name to live and are dead."—*Guthrie*.

THE COMING DAY.

Christ's coming again, whenever and however it shall be, is a rallying point for the expectations. That appearing shall be glorious in itself and on account of what it brings. The dear ones who sleep in him will be with him. A new heaven and a new earth, wherein dwelleth righteousness, shall be among the blessed realities of that time. The curse of the present will be felt no more. The weary will be at rest, the wicked will have no more power to inflict trouble. The tree of life, whose very leaves will be healing to the nations, will bear its oft-recurring harvests; and the ceaseless flow of divine favor will be as a river issuing from the throne. There will be no night, no evil and no death.—*Central Baptist*.

Brown's Bronchial Troches

Contain ingredients which act specially on the organs of the voice. They have an extraordinary efficacy in all affections of the Throat, caused by cold or over-exertion of the voice. They are recommended to Singers and Public Speakers, and all who, at any time, have a cough or trouble with the throat or lungs. "I recommend their use to public speakers."—Rev. E. H. Chapin. "Pre-eminently the best."—Rev. Henry Ward Beecher.

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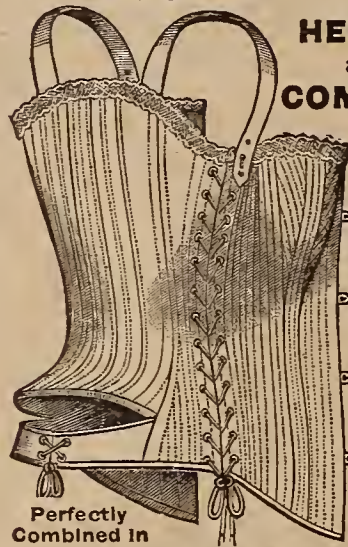
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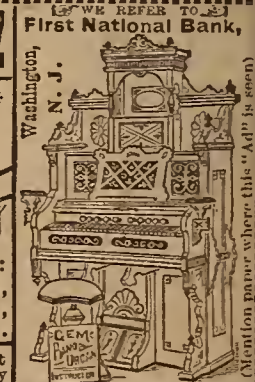


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Our Farm.

THE POULTRY YARD.

Conducted by P. H. Jacobs, Hammonton, New Jersey.

LICE AND THEIR KIND.

HERE are many kinds of lice, and they flourish when least expected. Lice work both day and night, and give the fowls no rest. When the bird is afflicted, it begins to droop, and gradually dies, but this only occurs when the premises are so overrun with the vermin that the dust bath will not relieve the hens. The kind that is seen on the walls, and is so small as scarcely to be found, is the red mite. They can hide anywhere, and, like the bed-bugs, work in the night. To dislodge them, pour kerosene into every crack and crevice, and swab it well on the walls. A cheaper preparation is strong soap-suds, adding a quart of kerosene to every gallon of the suds, applying the mixture boiling hot.

Another kind sticks to the skin, like a tick, and is usually found on the heads of both adults and chicks. One must look down at the roots of the feathers, close to the skin, to find them, for they at once begin to hide and are not easily found. They are known as the large, gray lice. To kill them, apply sweet oil, or cotton-seed oil, on the skin; a few drops only being necessary. If ten drops of oil of pennyroyal are added to each tablespoonful of the sweet oil, it will be a more efficacious remedy.

Several kinds of lice, which are nearly of the color of the body, feed on the feathers, and find harboring places under the wings. To kill them, dust the fowls well with fresh Dalmatian insect powder. There are insect powders that are of but little value, as they are unserviceable unless fresh. The powder is harmless to fowls and may be used freely.

If the poultry-house is kept free of lice, and a dust bath provided, the hens will keep themselves clean. The roosts of the hen-house should be well saturated with kerosene oil at least once a week, and the poultry-house should be overhauled once a month. The nests are favorite hatching places for lice and should be cleaned out once or twice a month. By keeping the house clean the hens will be in a better condition, and lay more eggs, as the vermin debilitate the hens and render them useless.

GROWING GREEN FOOD.

It will not always pay to allow the hens to run at large during this season of the year, for the garden crops will be growing, and the hens will make short work of the recently-planted seeds. Nor is it the correct thing to deprive the hens of green food. To supply the hens with but little

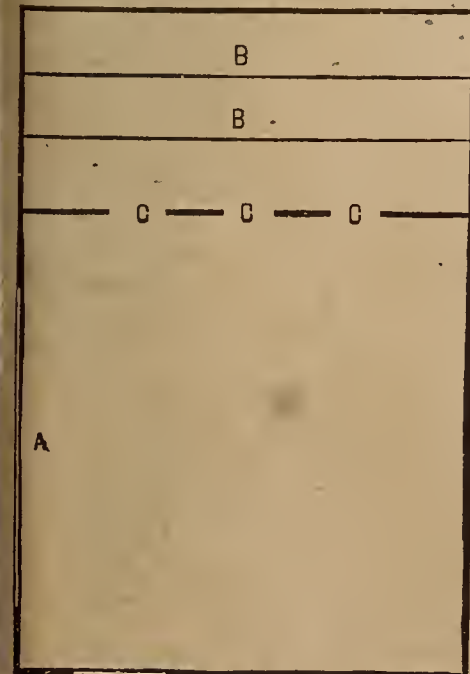


FIG. 2

difficulty, each flock should have two yards, in one of which something should be growing. The arrangement of the yards depends on circumstances, but as a crop for the chickens need not mature, it is only necessary to let the growth be but a few inches high. Oats, sorghum, turnips, kale, radish, or any kind of vegeta-

tion suitable, will answer, provided the seed is not too costly. On old grass plots, young grass will spring up as soon as the hens are removed, but it is best to spade up the yards, so as to turn under the droppings and for cleaning the yards. Oats and sorghum are the cheapest green foods, as the cost of seeding is small. Later in the season turnips are excellent, and even corn can be grown, the hens to be allowed to eat it off when it is three or four inches high.

BREEDING IN AND IN.

Procuring a male from a neighbor, and the next year the neighbor coming back to you, is not infusing new blood in the flock. It requires but a few years for all

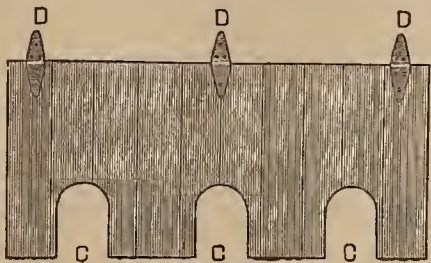


FIG. 3.

the fowls in a neighborhood to be related, and breeding in and in is practiced even when the males are not-bred on the farm. The way to avoid this is to procure males from a distance. Select a pure-bred bird, and aim to breed for some characteristic—merit—and have an object in view. Promiscuous breeding will never lead to success.

A ROOMY POULTRY-HOUSE.

A plan of a poultry-house, which gives a large amount of space on the floor, was sent us by Mr. D. C. McElroy, of St.

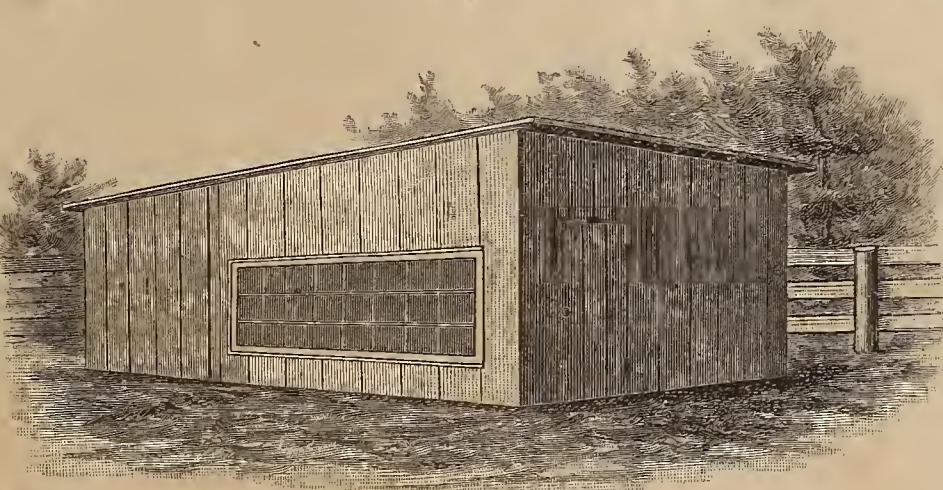


FIG. 1.

Clair, Mich. The rear is an addition to the other portion.

Fig. 1 represents the house with the shed attachment. As the roof is rather flat, tarred paper should be used in preference to shingles. The main house is 10x10 feet and the shed 4x10 feet, giving a space on the floor of 10x14 feet. The main house is 8 feet high at the front and 5 feet at the rear, the shed being 5 feet at the point where it joins the main portion, and 3 feet at the rear. Fig. 2 is a ground plan, the large window (3x6 feet) being shown at A, and the roosts at B B. The entrance holes to the shed are shown at C C C. Fig. 3 shows the plan of the door to the shed (sleeping room). It is hung by three hinges, D D D, and can therefore be raised or lowered at will, and when closed, the hens enter at C C C. This door, when raised and fastened during the day, gives the whole of the floor to the hens, and at night, when lowered, the hens are warm and comfortable. The house is intended to accommodate twenty-five fowls.

INDIAN GAMES.

A newly imported breed, called the Indian Games, are coming into favor, but the eggs being ten dollars per sitting, are rather high at present. In a year or two they will be more within reach of the farmers. The breed is said to be very fine in quality of flesh, excellent for market, and the hens lay well. The cocks weigh about nine pounds each.

PARCELS POST AND EGGS.

At the recent meeting of the American Poultry Association a committee was appointed to confer with the congressional committee on postal affairs, with the view of having eggs "for breeding purposes" admitted among the articles to be carried

by parcels post, should such a measure be adopted. It will save a large sum to breeders that now goes to the express companies.

GET RID OF THE MALES.

If you desire to preserve eggs for winter use, get rid of the males at once. Eggs from hens not with males will keep three times as long as those that contain the germs of chicks. As the hens will lay as many eggs when no males are present as when with them, the removal of the males will lessen the expense and the females have more room on the roost.

NEW BREEDS.

It is time enough to try new breeds after you have tried some of the old and reliable varieties. Many new breeds are only novelties, and last but a short time. The breeds that have been in use for one or two decades are well recommended by their length of service. The older the breed the greater the guarantee that it is one that is meritorious.

THE CROSSING NUISANCE.

As soon as it is known by all that the best results are obtained by a strict adherence to the use of pure breeds, the practice of destroying the flocks by crossing will cease. It is claimed that by crossing fowls the birds will become more vigorous, and also combine the good qualities of both breeds. This is true, but only when the proper breeds are used for that purpose. It is more frequently the case that the merits of both breeds are lost by crossing, and a mongrel produced from two excellent breeds. Some breeds do not "nick" with others, and to cross them is equivalent to reverting to that which the breed-

ers have been aiming to leave. When crossing breeds, select those that are hardy, and do not try to make a cross without selecting good specimens for that purpose. Just why some cannot keep two pure breeds more than one season without crossing them, is a mystery, but such seems to be the case. We believe better results can be secured by using the pure breeds in their purity than by any system of crossing that can be made.

INQUIRIES ANSWERED.

Diphtheric Roup.—Mrs. M. F., Tuckerton, N. J. asks: "Can you inform me what ails my poultry? Some breathe hard (resembles the asthma) and every few minutes make a strange noise. What can I do for them?"

REPLY:—It is similar to diphtheria in humans, a membrane forming over the windpipe. Remove sick birds from the others, and disinfect with a gill of crude carbolic acid in a gallon of water. Sprinkle a pinch of chlorate of potash around the windpipe in the morning, and give five drops of spirits turpentine at night.

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TO THE EDITOR:—Please inform your readers that I have a positive remedy for Consumption. By its timely use thousands of hopeless cases have been permanently cured. I shall be glad to send two bottles of my remedy FREE to any of your readers who have consumption if they will send me their Express and P. O. Address. Resp'y T. A. SLOCUM, M. C., 181 Pearl St., N. Y.

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Queries.

READ THIS NOTICE.

Questions from regular subscribers of FARM AND FIRESIDE, and relating to matters of general interest, will be answered in these columns free of charge. Querists desiring immediate replies, or asking information upon matters of personal interest only, should enclose stamps for return postage. The full name and post-office address of the querist should accompany each query. In order that we may answer by mail if necessary. Queries must be received at least two weeks before the date of the issue in which the answer is expected. Queries should not be written on paper containing matters of business, and should be written on one side of the paper only.

German Poultry Paper.—J. D. Minneapolis, Minn. Send for a sample copy of "Der Gefuegel Zuechter," published at Wausau, Wis., by Henry E. Voigt.

Mixing Lime and Aeld with Manure.—J. D. W. Kappa, N. C., asks: "Is there any advantage in mixing lime with manure, or with some acid?"

REPLY BY JOSEPH:—The only substances that I would recommend to mix with stable manure are muriate of potash, kalait and sulphate of lime (gypsum).

Wire Worms.—C. H. A., Binghamton, N. Y. The only way that we can suggest to you to get rid of these pests is to follow the ground or cultivate it for a few seasons in crops which the wire worms do not damage. It is claimed that the use of chemical fertilizers will prevent them from injuring potatoes, while the use of cow manure seems to encourage the pest.

Peanut Culture.—I. B. P., Romney, W. Va. Plant and cultivate peanuts just as you would beans. It is not necessary to cover up the vines with dirt when they blossom. Keep the soil loose and mellow, and the pods will push into the ground and take care of themselves. The Orange Judd Co., 751 Broadway, New York, publish a pamphlet which will give you full information on the subject. The pamphlet is entitled, "The Peanut Plant, Its Cultivation and Uses."

Whitewash.—G. F. G., Nevada, Mo. Take nice, fresh-burned, unslacked lime, one half bushel; slack it with boiling rain-water, keeping it covered during the process to keep in the steam. Add to this one peck of salt, dissolved in water. Then add five gallons more of hot water and stir the mixture well. Cover it up and let it stand a few days. Apply it hot. Some thin it with skimmed milk. The secret of making it stick well is to have good lime well mixed with the salt and applied hot.

Silvering on Mirrors.—J. D. McM., Lumberton, N. C. The following, from "What Every One Should Know," will answer your question: Pour upon a sheet of tin foil three drams of quicksilver to the square foot of foil. Rub smartly with a piece of buckskin until the foil becomes brilliant. Lay the glass upon a flat table, face downward, place the foil upon it, lay a sheet of paper on the foil, and place upon it a block of wood or a piece of marble with a perfectly flat surface; put upon it sufficient weight to press it down tight, let it remain in this position a few hours. The foil will adhere to the glass.

Potash Salts.—F. H. M., Concord, Ohio, desires to know what muriate of potash and kalait are worth at the factory, where they can be purchased, and what percentage of potash they contain.

REPLY BY JOSEPH:—Muriate is worth about \$40 to \$45 per ton, and can be had of any large fertilizer firm; for instance, of Mapes Farming and Peruvian Guano Co., New York; Bowker Fertilizer Co., New York; Williams & Clark Co., New York, etc. Kalait is worth about \$13 per ton, and can be bought of Paul Weidinger, New York, etc. Analyses are given in article on "Agricultural Chemistry," in this issue.

Manure for Corn.—C. S. L., Sheldon, Ohio, writes: "Give best way of manuring corn in the hill with stable manure. Would it be advisable to use bone meal in the hill? If so, how applied?"

REPLY BY JOSEPH:—Nothing can be gained by applying stable manure, whether fresh or rotted, in the hill. Corn is a rank feeder, and will find the manure even if put between the hills or rows. The best way of application, always, is by broadcasting and plowing under. A little bone dust may be applied upon the hill before or after planting, or even after the corn is up.

Potato Fertilizer—Alfalfa Seed—Feed for Cows.—J. O. S., Portland, Mich., writes: "What is the best fertilizer for potatoes on heavy, clay loam?—Where can I get seed of alfalfa clover, and what will it cost?—What is the best feed for cows for milk and butter?"

REPLY BY JOSEPH:—Well-rotted stable manure is a safe fertilizer for potatoes; so is a high-grade, special potato manure. Wood ashes in moderate quantities are also good. Alfalfa clover seed can be purchased of any large seed house in the United States and Europe. Prices fluctuate. Write to the firm nearest to you. They will quote you prices. —Pasture the cows on pastures of mixed grasses and feed wheat bran.

Crematory Ashes.—S. M. H., Van Buren, Ohio, writes: "What is the value of ashes from the crematory where dead animals and all the refuse from the city are consumed? What effect will they have on corn, potatoes, garden truck, etc.? I can buy them at \$1.50 for a 250-pound barrel."

REPLY BY JOSEPH:—Such ashes undoubtedly vary much in composition, according to the stuff that is burned. Only an analysis of each lot could show its exact value. If reasonably free from admixture of soil, clay, old mortar and rubbish of a like character, and fresh and dry, these ashes ought to be worth at least \$12 per ton, and if many animals were consumed, the value of the ashes would probably be much higher. Like all other ashes, they make a most excellent fertilizer for almost any crop, and gardeners and fruit growers will hardly ever make a mistake by applying them freely.

Damp Cellars.—F. L. H., San Antonio, Texas, writes: "My cellar is walled with limestone rock and mortar, four feet under ground and four feet above ground. The floor and inside wall are cemented. It has three windows covered with wire gauze, and the same. In damp weather, the walls and floor sweat, and meat and milk become mouldy."

J. K. L., Cambria, Wis., also writes: "I have a good cellar, built with stones, but we have, of late years, been troubled with the dampness of these walls. We take care not to let in any air during the day, and open the window after sundown. Dampness collects on the walls and runs down on the floor, which is cemented."

REPLY:—Both cellars evidently need drainage. Put down a tile-drain around the walls on the outside. Put it down below the foundation, so as to secure perfect drainage. This will make your cellar dry and remove a danger to health.

Wheat Bran and Wood Ashes as Fertilizers.—C. H. P., Linden, Mich., writes: "How much wheat bran should be sown broadcast on an acre of light, sandy soil to insure a fair crop of corn? The last crop was twenty bushels of wheat per acre. Would a large handful of unleached wood ashes put on each hill of early potatoes after planting be of any use, or would you put the ashes in the hill and then cover?"

REPLY BY JOSEPH:—Where wheat bran can be purchased at \$13 per ton or less, it may pay to use it directly as a fertilizer. Otherwise, and usually, it is better to first feed it liberally to stock, and then apply the manure. But if you desire to try the bran application broadcast, use the same money's worth as you would of other fertilizer. Make a trial with say 500 pounds. Mix the ashes with the soil in the hill or drill at planting time, either above or below the seed pieces. Mode of application, if at this time, makes usually less difference than quantity of fertilizing material.

Sulphate and Muriate of Potash.—J. R. F., writes: "What is the difference between sulphate and muriate of potash? Which is the most available? How heavy can potash be safely applied? Would 600 pounds of muriate, applied in the row, be too much per acre for potatoes?"

REPLY BY JOSEPH:—Sulphate of potash is a little more readily available, and usually a safer form than muriate. For spring application on potatoes I would prefer the sulphate, although its potash costs about seven cents a pound, while in muriate it costs only four or four and one half cents. If to be applied in the fall previous, I would use the muriate. Its chlorine, which is hurtful to many crops, would then be largely diluted and made harmless before spring. Muriate of potash, in the quantity named (600 pounds per acre), is entirely too much, and would be liable to ruin the crop. Large doses are also pretty sure to make the tubers scabby. For most fruits, I prefer the muriate, or the kalait, because they usually give the same effect as the sulphate, and this at less cost.

Celery Queries.—C. J. S., Bloomingdale, Ind., writes: "What kind of soil is best for celery? Are barn-yard manure and wood ashes good fertilizers? What sorts, early and late, do you consider best for home use and market? Where can I get a good, reliable book on celery growing? What is the price of Joseph's book on gardening?"

REPLY BY JOSEPH:—Rich garden loam is the best soil, and well-rotted compost the best fertilizer for celery. White Plume is thus far unsurpassed for early home use and early market; the New Rose or Pink best, for late home use, and Golden Heart good for both purposes. Mr. W. W. Rawson, Boston, Mass., has issued a very good little work on celery culture (published about two years ago), and reliable information may also be found in the late Peter Henderson's "Gardening for Profit." Of course, I am vain enough to imagine that the detailed instructions on celery culture found in my work, "How to Make the Garden Pay," now fresh from the press, are complete, up to the times and entirely reliable; but my readers would probably rather hear somebody else say so. This work is published by Mr. Wm. Henry Maule, Philadelphia, Pa., and costs \$2.

Wood Ashes and Hen Manure for Onions.—N. S., Hemlock City, Mich., writes: "How much unleached, hard wood ashes would you put on a square rod of clay loam that has been manured with cow and hen manure for four years? How much hen manure for onions on the same space? Would muck which can be had from a marsh one half mile distant do any good on such soil? What kind of onions would you recommend for this part of Michigan?"

REPLY BY JOSEPH:—If for onions, put on as much of the ashes as you can afford, even if one half inch thick all over the ground. Apply after plowing, and harrow thoroughly afterwards. Usually, we consider twenty-five pounds of dry, hard-wood ashes a pretty good dressing for a square rod of land. If the land is very rich to begin with, and for common crops, much less will do. Hen manure, if well composted and fine, can also be applied in same manner, and even more liberally. Never mix wood ashes and poultry droppings, but apply each separately, and mix them well with the surface soil; then there will be no waste. Muck is well worth hauling one half mile to compost with wood ashes, etc., or to use as absorbent in the stables, especially if your soil is not well supplied with humus (decaying vegetable matter). As to onions, plant the variety or varieties which your available market prefers. The leading sorts everywhere are Early Red and Red Wethersfield for red; Yellow Globe Danvers for yellow; White Globe for white; Early Red, Yellow Dutch and Silverskin for sets; and Early Queen and Barletta for pickling purposes.

VETERINARY.

Conducted by Dr. H. J. Detmers, Veterinarian of the Ohio Agricultural Experiment Station, and Professor of Veterinary Surgery in Ohio State University.

To regular subscribers of FARM AND FIRESIDE, answers will be given through these columns free of charge. Where an immediate reply by mail is desired, the querist should enclose a fee of one dollar, otherwise no attention will be paid to such a request. Inquiries should always contain the writer's full address. Queries must be received at least two weeks before the date of the issue in which the answer is expected. Subscribers may send their veterinary queries directly to Dr. H. J. DETMERS, 35 King Avenue, Columbus, Ohio.

Warts.—C. H. F., Little Rock, Ark. If the warts have a neck, put a tight ligature around and they will come off.

Small Umbilical Hernia.—J. E. M., New London, Md. If the hernia does not decrease in size, have it operated on by a competent veterinarian.

Heaves.—R. H. B., Greenton, Mo. Heaves is incurable. It does not necessarily interfere with the breeding, but pregnancy increases the difficulty of breathing.

Breeding Age.—A. E. B., Lena, Ill., writes: "At what age should helpers come in for best results?"

ANSWER:—That depends upon a great many circumstances, but particularly upon the breed and the purpose they are bred for.

Swelled Leg.—A. E. N., Duran, Ill. Exercise the animal during the day, apply a bandage of woolen flannel when the exercise is over, and keep it on during the night. For further information, I refer you to the answers given to numerous similar inquiries in these columns.

Fleas on Dog.—S. H., Moberly, Mo. Persian insect powder (pyrethrum, roseum and carnum), if genuine, is very good, but it is not

sufficient to dust it into the coat of hair of the dog; it must also be applied to his sleeping place or places, after the same have first been thoroughly cleansed.

Blind Stagers—Black Teeth.—G. W. D., Phillipsburg, Kan. Pigs will act like having blind stagers (pressure upon the brain) and move in a circle, if they have been fed (poisoned) with brine. Black teeth do not cause blindness, but you may break them out. The other disease you complain of may be swine-plague.

Lameness.—E. C. H., Fayette, Tenn. Your description does not indicate the nature of the lameness. It may be spavin. Still, it is immaterial. An animal that has been continuously lame for two years, and lame enough to cause the muscles of the hindquarters to atrophy (to perish away, as you call it) must be considered as incurable.

Wants a Book.—J. N. D., Edgerton, Minn., writes: "Will you tell me where I can obtain Prof. Lantard's book on animal castration? I have inquired of all the booksellers in the neighboring towns."

ANSWER:—Tell one of the booksellers to order it for you. You cannot expect a country bookseller or dealer in school-books to keep such books in stock.

A Small Tumor.—C. D. T., Florissant, Mo., writes: "My young mare bruised her shoulder, last fall, under the collar. It has left a small, hard lump, about the size of a pea, between the flesh and the skin. Whenever the collar is on, it seems to hurt the animal."

ANSWER:—The only way to remove such a tumor, or, as you call it, a small, hard lump, is to cut it out. Hence, call in a veterinarian to perform the operation.

Bog-Spavin.—J. W. D., Kuthawn, Ky. Your colt has bog-spavin, an enlargement of the capsular ligament of the hock joint, which very seldom produces lameness. Some call it a windgall. You may apply, once a day, an ointment composed of iodine, one part, to lard, twelve parts. It is not necessary to apply much of it at a time, but what is applied should be rubbed in well. By this treatment you may succeed in reducing the swelling, but may expect that any severe exertion will reproduce them.

Lameness.—M. M. K., Star Prairie, Wis., writes: "I have an eight-year-old mare that is lame in the left fore leg. There is a bunch growing right below the knee, on the inside, just like a spavin. I think she sprained it in some way. The hoof also is feverish, similar to founder."

ANSWER:—Never mind the bunch; that is simply a splint, which hardly ever causes any lameness. The "feverish" condition of the hoof indicates the seat of the lameness. Have the foot examined by a competent veterinarian, or, if none is within reach, by a good horse-shoer.

A Diseased Eye.—P. W. N., Steam Corners, Ohio, writes: "I have a three-year-old colt that had a bruise on its eye, last summer. The lids were swelled some and the eye watered. I bathed it a few times and it got all right, but left a white streak in the eye. The milk-colored ring between the white and the transparent part of the eye is marked double at the lower part of the eye."

ANSWER:—If the trouble was caused, as you say, by a bruise, and if the "milk-colored ring," as you call it, is on the external surface of the cornea, and not in the interior of the eye, there is no particular danger, that it will in the future any more affect the eye than it does at present.

Cows Getting Stiff.—E. B., New Hartford, Iowa, writes: "Two of my cows got stiff in their limbs and back. They got poor and one of them died. The other recovered. Now a third one is affected the same way. I keep my cows on a floor in stable."

ANSWER:—Not knowing how your cows are kept and treated, it's very difficult to answer your question. I would advise you, though, to give them more exercise, to have them not exposed to draft in the stable, especially when the wind blows from the north-west, and to keep up the activity of the skin by a frequent application of currycomb and brush. If the manner in which your cows are kept is faultless, and if you are convinced that the disease is hereditary, it will hardly be necessary to tell you that it will be best to get rid of that family of cows.

Mastitis.—J. T. D., Unionville, Mo., writes: "I have a four-year-old mare that dropped her colt about two weeks ago. She gives no milk, only something like bloody water. What is the cause and what is the remedy?"

ANSWER:—If you examine the udder of your mare, you will find it swollen, abnormally warm and painful, or in other words, more or less inflamed. The treatment depends very much upon the causes that are and have been acting; but your inquiry does not indicate what they may be. Therefore can only advise you to milk your mare quite often—at least once every two or three hours—to keep her under good sanitary conditions, to feed her a moderate quantity of easily digestible food, and not to work her. As to the colt, the best you can do is to give it, once every three hours, warm cow-milk, diluted with water, and slightly sweetened with a little of the best white sugar, until the mare is able to nurse it.

Diseased Lungs.—J. F. M., Rhine, Wis., writes: "What ails my three-year-old horse? When I bought him I led him about eleven miles. On that trip he gave at intervals of two or three miles one strong cough. After about four weeks all my horses coughed badly. All got over it in about two weeks but this horse, and he is the same as when I bought him. He sweats profusely on breast and shoulders with moderate exercise. His breast and shoulders seem not to grow, his skin is not smooth, and he is not as spirited as he should be. He has a wart on the front of his knee about the size of a quarter dollar, standing out about half an inch, which, from lying on it and occasionally hitting it against the manger, is generally raw, and bleeds when he hits it hard."

ANSWER:—Your horse, it seems, has diseased lungs; but whether it is hyaline, abscess formation or adhesion between the pulmonary and costal pleura, does not appear from your description. Have him examined by a competent veterinarian. The wart can hardly be expected to be brought to a healing until the lung trouble has disappeared. The veterinarian who examines the horse will also attend to the wart.

A Severe Strain.—G. D. S., Ontario, Ill., writes: "I had been breaking sod with my five-year-old mare a few days, and on going to the barn one morning I noticed she seemed to be stiff in the left hind leg. I led her out and she walked with a sort of jerk in that leg, and every time she bent it it would snap. It looked like strabismus. After a little exercise she seemed to be all right again. I bathed the hock with liniment. She also had a swelling

come on her shoulder, last summer, like a collar boil. This spring the bunch has come again, and although I have been very careful with her the bunch seems to get worse."

ANSWER:—Breaking sod is hard work, and your mare, it seems, strained the tendons and ligaments of the hind legs, and, may be, overworked some of the muscles, too. To make a more definite diagnosis would require an examination. Your conclusion to give her strict rest is a good one, and if you carry it out, will, very likely, effect a recovery. While the injury was yet fresh, applications of cold water would have been much preferable to any liniment. The collar boil, very likely, will require a surgical operation, but not by one who uses carbolic acid as a blister. Still, the boil may have disappeared by the time the mare has recovered from her other injury; if not, consult an intelligent veterinarian.

Worms.—C. L. P., South Reynolds, Vt., writes: "I have a flock of Southdown sheep. Last fall, when in pasture, I noticed that one or two lambs began to scour. Thinking they found some weed that injured them, I put them on full feed; others were taken, failed in appetite, lost strength and flesh, and in from two to six weeks died. Not one of the lambs taken lived. During the fall and winter I have had several old sheep taken in the same way; some have died and several are now sick. The disease does not seem as severe as the lambs. Several of my broad ewes affected by this trouble have dropped strong, rugged lambs, which, after a few days, have drooped and died. During the fall and early winter they coughed and seemed to choke. The winter of 1888-89, my sheep were fed largely on corn ensilage. All that are affected were fed on that ensilage, or were suckled on ensilage-fed sheep. I have fed none this winter. Had that anything to do with it?"

ANSWER:—Your lambs and sheep were killed by worms—Strongylus filaria in the lungs, Strongylus contortus in the fourth stomach, and, may be, Distomum hysaticum in the liver. If you desire to keep them healthy this year, you must keep them away from low and wet ground, and not allow them to drink out of stagnant pools of water, or out of ditches or small, sluggish running creeks. If there are any low and wet places, corners, or waterpools in your sheep pasture, you must force them out. It will be best, however, to also avoid all those places where your dying sheep and lambs have been from the later part of the summer until now. The ensilage has nothing to do with it.

A SALARY

With expenses paid will come handy to anyone who is now out of employment, especially where no previous experience is required to get the position. If you want a position, see advertisement on page 266, headed, "A Chance to Make Money."

100SCRAP Pictures & Agts Card Outfit 2c. & present free. E. H. Pardee, Fair Haven, Ct.

OLD COINS WANTED.

High prices paid for hundreds of dates and varieties, including half-cents, cents, two, three, five cents dimes, quarters, halves, dollars, etc. \$1.00 for a certain coin. Dates before 1860 especially wanted. Send list of those you have, enclosing stamp for particulars, may be worth many dollars, perhaps a fortune to you. W. E. SKINNER, Largest Coin Dealer in U. S., 16 Globe Building, BOSTON, MASS.

100,000 DRESSMAKERS HAPPY.

DRESSMAKING SIMPLIFIED.

Any Lady Can now Learn to Cut Perfect-Fitting Dresses.

Patented 1879-1885 1884-1886 No one using a Chart or Square can compete with The McDowell Dressmaking Machine in Cutting Stylish, Good, and Perfect-Fitting Garments. Easy to Learn, Rapid to Use, Fits any Form, Follows every Fashion. An Invention as Useful as the Sewing Machine. Free 30 days to test at your home. Send for literature and Circular. THE McDOWELL CO., 6 West 14th St., New York City.

We know the advertisers to be thoroughly reliable, and that their machine is a really wonderful invention.—Editor.

REGULAR RETAIL PRICE \$35.00

SAMPLE FREE!

To introduce our watches, for 60 days we offer our regular \$35 solid 15-karat gold and pure coin-silver watch for \$5. Cut this out and send to us with 50 cents in postage stamps as a guarantee that watch is ordered in good faith, which will cover us from loss from express charges, and we will send the watch to you, C.O.D., subject to examination. If found perfectly satisfactory, we warrant the case to be equal in appearance to a \$100 solid 15-karat gold watch. It is heavily plated with 15-karat solid gold over pure coin silver, making a case containing nothing but pure gold and silver—both inside and gold outside. The cases are hand-made, beautifully engraved by the most skilled engravers. It will retain its high color and luster for a lifetime, different from the cheap brass watches offered. It contains nothing but solid gold and pure coin silver, and in fact it is in every way, except in intrinsic value, equal to a \$100 gold watch. The movement is one of the very finest and latest American pattern, every piece is carefully made and fitted by hand, it is accurately regulated and adjusted with finest escapement and chronometer balance, quick train, full jeweled, ruby pallets. Order at once or our price will be advanced. This offer is good for 60 days to those who will endeavor to make sales, otherwise we charge \$35.00.

WM. WILLIAMS, 121 Halsted Street, Chicago.

ALL FAT PEOPLE

can safely Reduce Weight and Cure Compensatory Permanently by taking TRILENE TABLETS (Regd.) for a few weeks. They are small, agreeable, harmless, and never fail to IMPROVE both HEALTH and FIGURE without Change of Diet. An English Countess writes:—"Four Trilene Tablets act admirably." Send Postal Note for 75 cents to THE TRILENE CO., Sole Proprietors, 834 Broadway, New York.

Always mention this paper when answering advertisements, as advertisers often have different articles advertised in several papers.

Our Miscellany.

THE United States is the richest country on the globe, its total estimated wealth at present being \$61,459,000,000.

THE English language is now spoken by 99,861,000 people, or about 27 per cent of the total population of the globe.

GALVANIZED iron is ordinary iron which has been dropped in molten zinc, and retains a surface coating of the zinc when removed.

THE annual aggregate number of letters transmitted through the post-offices of the world may be estimated at 8,000,000,000, and of newspapers, 5,000,000,000.

A BUNDLE of spider webs, not larger than a buckshot, and weighing less than a drachm, would, if straightened out and outtaugled, reach a distance of 350 miles.

THE oldest ruins in the world are probably the rock-cut temples of Ipsambut or Abon Sauboul, in Nubia, on the left bank of the Nile. They are over 4,000 years old.

A GARDENER, who had predicted rain for the day, thus gave his reason for doing so. "Most always when I don't expect it to rain, it does rain. To-day I don't expect it to rain at all, so I know it'll rain."—*Harper's Magazine*.

THERE is no gain in simple suffering, in giving up and parting with what is good, and right, and beautiful; righteousness does not come about in that way; it comes, instead, through that faith and trust in God which make one capable of any sacrifice.—*T. T. Munger*.

BEECHAM'S PILLS cure bilious and nervous ills.

ATTAR of roses is worth from \$12 to \$15 an ounce, at wholesale. It takes 6,000 leaves to make one pound of attar.

A WONDERFUL OFFER.

\$700 Piano for \$1. Sample copy of Indiana State Sentinel sent free to any address, explaining this offer. Address Sentinel, Indianapolis, Ind.

Recent Publications.

EXPERIMENT STATION BULLETINS.

Sent free, on application, to residents of the state in which the station is located. Address Agricultural Experiment Station.

ALABAMA (Auburn) Annual report for 1889. Bulletin No. 11, February, 1890. Peaches and plums. Notes from the experiment orchard. Bulletin No. 12, February, 1890. Co-operative soil tests with fertilizers. Bulletin No. 13, March, 1890. Microscopic study of certain varieties of cotton. Illustrated.

ALABAMA (Cane-brake Station, Uplandtown) Bulletin No. 7, February, 1890. Cotton, corn, peas, melilotus.

ARKANSAS (Fayetteville) Annual report. CANADA (Central experiment farm, Ottawa) Bulletin No. 6, January, 1890. Barley.

ILLINOIS (Champaign) Bulletin No. 7, November, 1889. The biology of ensilage. Field experiments with oats. Bulletin No. 8, February, 1890. Field experiments with corn.

INDIANA (Lafayette) Bulletin No. 30, February, 1890. Influenza (or distemper of horses).

KANSAS (Manhattan) Bulletin No. 9, December, 1889. Experiment in pig-feedlug. Short-brim and corn meal and potatoes as food for young pigs.

KENTUCKY (Lexington) Bulletin No. 22, December, 1889. Potato experiments. Bulletin No. 23, February, 1890. (1) Experiments with oats. (2) Tests of fertilizers on meadow land.

NEW YORK (State Station, Geneva) Eighth annual report, for 1889.

PENNSYLVANIA (State College P. O.) Bulletin No. 10, January, 1890. (1) Should farmers raise their own vegetable seeds? (2) Notes on new varieties of vegetables. (3) Tests of agricultural varieties, 1889.

VIRGINIA (Blacksburg) Bulletin No. 3, November, 1889. (1) Steer feeding. (2) Meteorological record. Bulletin No. 4, January, 1890. (1) Field tests with tomatoes. (2) Chemical composition of tomatoes.

WEST VIRGINIA (Morgantown) Bulletin No. 5, June, 1889. The selection of milch cows.

WISCONSIN (Madison) Bulletin No. 22, January, 1890. Report on oats, barley and potatoes for 1889.

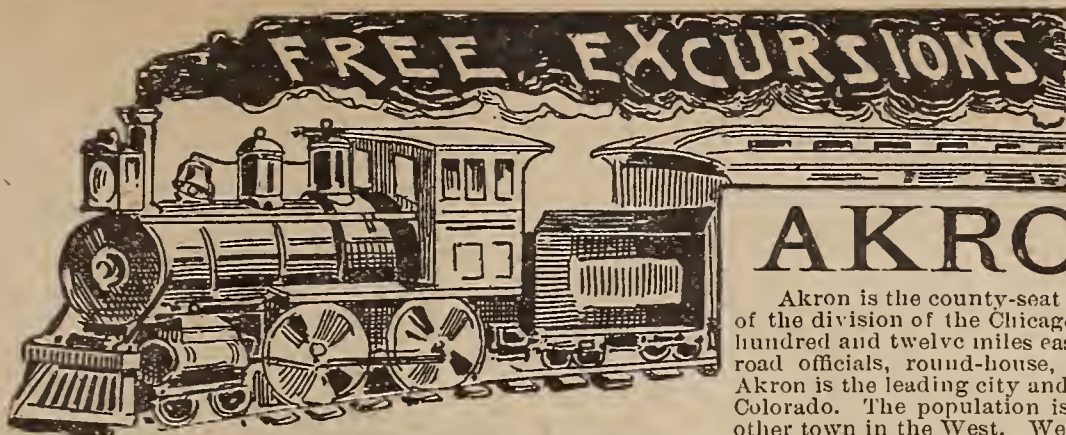
CATARRH CURED.

A clergyman, after years of suffering from that loathsome disease Catarrh, and vainly trying every known remedy, at last found a prescription which completely cured and saved him from death. Any sufferer from this dreadful disease sending a self-addressed stamped envelope to Prof. J. A. Lawrence, 83 Warren street, New York, will receive the recipe free of charge.

WARRANTED 20 YEARS

FOR 50 CENTS

In postage stamps and this advertisement we will send this watch by express to any address. You can examine and test it thoroughly, and if you do not find it equal to any watch retailed at \$25.00, exactly as represented, and far superior to any watch advertised in papers, and worth three times as much as the watches so extensively advertised under various names at from \$4.00 to \$10.00, YOU NEED NOT PAY ONE CENT, otherwise, after examination, you pay the express agent the balance of \$6.15 and take the watch. Case is hunting style, **WARRANTED 13 KARAT, GOLD-PLATED**, beautifully engraved, and ornate, stem-wind and stem-set, movement is **ELGIN** style, quick train (18,000 beats per hour), solid nickel, richly jeweled, accurately regulated and adjusted and fully warranted. You can make \$100 a month selling our watches. We send our big catalogue with each watch and give you the exclusive agency if desired. Or, der now, this ad, will never appear again. Address, **THE WARREN CO.**, 219 Nicollet Av., Minneapolis, Minn. Reference any Bank in Minn. Mention Springfield Farm and Fireside.



KEEP YOUR EYE ON AKRON, COL.

coal, lime, cement mines; elegant building stone; the best fire clay, natural gas and mineral springs; a soil unsurpassed for fertility; a rolling country, plenty of pure water and abundant rains.

Resolutions to Advertise. The following resolutions were adopted at a recent meeting of The Board of Trade: Whereas, the property owners of Akron having placed a large number of lots in the hands of the Secretary of the Board of Trade, one third of which are to be given free of charge, to persons in all parts of the United States. Resolved, that the Secretary be authorized to expend sufficient money in newspaper advertising, circulars and such printed matter as may be required to bring before the people of the United States the advantages Akron offers for investment, business and residences, and that the property placed in his hands for free distribution shall be distributed as he may deem proper.

A. J. JOHNSON,

Pres't of Board of Trade, Akron, Col.

By JOHN R. CALDER, Secretary.

THE BOARD OF TRADE of Akron are determined our town shall grow and property increase in value rapidly, and they feel the only way to accomplish this, will be to give strangers an interest in the prosperity of our city, and further, bring all who will come, to Akron, that they may see for themselves the great future prosperity in store for them, and in addition, interest them as well in the city and country. Get these strangers to invest in the business and trade and manufactories; locate them on improved farms or on Government land as they may wish. To this end we are arranging

FIVE GRAND EXCURSIONS

Trans-Continental

from all parts of the country, in the next five months, commencing with April 22nd, then May 20th, September 9th and 23d, October 14th; 30 days limit from day of sale, with privilege of stop off west of Mousa river, to Akron and Denver, and in order that the incoming visitors shall have a decided monetary interest in the town, the Board has placed at the disposal of the Secretary a number of valuable building lots, with instructions to send a deed for one of these lots to each reader of this advertisement who may send his or her name to the Secretary, with 25 cents to pay notary fee and postage. These lots are a free gift, and entirely unencumbered, each deed containing an abstract of title from the Government; the taxes paid for 1890.

Many of these Lots are worth now \$100 each. On December 11th, 1889, an excursion was run from Denver to Akron, when lots in the same ward sold at auction at from \$15 to \$250.

The Giving of these Lots Free is no Scheme or Trick, but a straightforward, enterprising business effort by enterprising people to legitimately build up our city. There is no obligation on the part of the holder of this deed to visit Akron this summer, but we know that a large number will be induced to come. All we ask of those who stay at home is that they talk Akron and send their friends. With all this enterprise back of it, the city is sure to grow, and grow fast, and the lots that are now worth \$100 cash, should by Fall, when the street cars get to running, be worth from \$500 to \$1,500. These are facts, we mean business and want you to own a town lot and come to Akron.

The Denver, Col., Daily News, in their issue of Feb. 10th, says: "Real Estate in Akron has advanced 25 per cent in the last 60 days, and advises from the East indicate a wonderful immigration to this section of the State. It would not be surprising that within two years all the Government land within the Akron Land District, will be taken up by actual settlers. Akron will put in a \$25,000 water system this Spring, and the business men of Akron have purchased two car loads of wheat, oats, barley and flax, which is being donated to the settlers for planting. The Burlington Railroad shipped the grain in free. This matter was taken hold of for the purpose of encouraging the farmers to plant a large acreage of diversified crops."

AMERICAN PLUCK AND ENTERPRISE.

A very unusual advertisement appears in this issue of our paper; striking and decidedly American in the characteristics of enterprise and push. The citizens of Akron, Col., through their Board of Trade, are determined to make their town prosperous through the only means that has ever made any place prosperous, and that is the influx of visitors and settlers. Their method of giving strangers part and parcel with themselves in the shape of city lots that have been sold at auction from \$15 to \$250, and further providing transportation by special trains across the continent, with the privilege of visiting Denver and the Rocky Mountains for a mere nominal price, is certainly enterprising to the highest degree. We have heard of town lot schemes before. In nearly every case, we believe, they have turned out to be fraudulent in some respect but this method of building a city and pushing it, is widely different from any of these alleged "town lot free schemes." In this case the town lots are not the object but the occasion of urging people to come and be citizens of the city. The Board of Trade wisely recognize the fact that "where your treasure is, your heart will be also," and know if any one has a valuable piece of property in a growing, thriving Western town, at some time or other, he will find his way out there. The investment by gift of \$10,000 or \$15,000 in city lots as an advertisement in connection with their grand excursions, are certain to draw thousands of people to Akron, and make it at once a great thriving city. Farmers will take up the government land; capital will cause manufactories to spring into existence; trade and commerce will be attracted, and the few lots that are given to bring this about, will increase its value enormously, and at the same time increase the value of all other parts of the town to a corresponding degree.

The Board of Trade do not state in their advertisement how long this free distribution of lots will last, but we presume it will be on the plan—first come, first served—and we cannot urge our readers too strongly to take advantage of the enterprise and pluck of the citizens of Akron, Col., and secure one of these lots while they may be had.—*Toledo Blade*.

CLUB TRIPS TO COLORADO.

Interest your neighbors in Akron. We will send you plenty of information, so that you can talk it up. Get their names, and send them to the Secretary of the Board of Trade, with 25 cents for each deed, to pay notary fee and postage, and notify him that these people wish a town lot. Dates of excursion are named above. It is advisable that the clubs from each locality be as large as possible, as arrangements can be made by which (if there are 50 or 75 in one party) they can have an entire car to themselves.



The United States Government Land Office is located at Akron, and the Board of Trade will locate homesteads and pre-emptions when desired.

Do you want to know about AKRON? Write to the Postmaster at Akron, to Wm. Sturdevant, President State Bank, Akron; Henry Lewis, President Farmers' and Traders' Bank, Akron; J. E. Phillips, President Washington County Bank, Akron, or to any of the banks or business men of Denver.

Do not fail to send us your address at once, with 25 cents to pay notary fee and postage, and obtain one of our city lots, which are now rapidly increasing in value. Address

JOHN R. CALDER, Sec'y of the Board of Trade, AKRON, COLORADO.

BURLINGTON DEPOT.

Mention this paper.

ORGANS \$27. PIANOS \$130. Circulars free. DAN'L F. BEATTY, Washington, N. J.

GIVE the poor children a chance. Send \$2 and buy a \$25 Town Lot, 50x150 feet, at Roslin, Tenn., on monthly payments. W. R. Koss, Office, Deer Lodge, Tenn.

REEDS FOR WEAVING CARPETS, Etc., are made by J. B. HOLT, RUTLAND, OHIO.

TRY our pack of assorted Scrap Pictures. 12 elegant Embossed Sheets, 20c., postpaid. White Doves, Frosted, Friendship, Hands, Mottoes, Scenes. Agents wanted. Headquarters for Printers' Cards, Type, Presses. THALMAN MFG. CO., 501 Balt St., Baltimore, Md. Please mention this paper.

RHEUMATISM

NOT TEMPORARILY RELIEVED BUT PERMANENTLY CURED

Each case treated separately. Send YOUR address for Treatise on Rheumatism with full information regarding its cure. **FREE.** YELLOW PINE EXTRACT CO., Box 246, PITTSBURGH, PA. (Mention this paper)

FARMER'S 20 inch Burr Stone Mill \$35.00. Catalogue free. Harrison Mill Co., New Haven, Ct.

SAVE YOU \$10.00 TO READ THIS.

COMPLETE PHOTO OUTFIT FREE!

TO introduce our new style instantaneous process, whereby you can take 50 of your own or friends' pictures—can copy and take hundreds of old photos, or new pictures found in books, &c., from Photo size to 6x8 in. You do away with paying \$3.00 or \$5.00 per dozen for 1 photos, and can establish a profitable paying business right at home—some clear \$50.00 in one week making pictures. Any one can become an expert. It is a delightful, easy work, for lady or man. No chemicals or costly articles needed. Outfit also includes half dozen negatives so you can print Hundreds of Fancy Pictures, to sell from them. As we want to establish an agency in every town, we will send one sample outfit to introduce the business at once. Enclose 25c. for packing, &c., and we send it securely boxed. **PHOTO OUTFIT CO., Augusta, Me.**

MENTION THIS PAPER WHEN ANSWERING ADVERTISEMENTS.

FREE will play 100 tunes. To introduce them, one in every county or town furnished reliable persons of either sex who will promise to show and introduce our Watches, Jewelry and Musical Goods. Send your address & 2 cent stamp and be convinced. **W. H. WILLIAMS,** 121 So. Halsted St., CHICAGO, ILL.

CEDAR MILL, OREGON, March 5, 1890. The Atlas came a few days ago and I am highly pleased with it. Would not take \$5.00 for it if I could not get another. The maps are excellent and complete. I am so much pleased with it that I write requesting your special terms to agents. I am a teacher and think I could sell some to others of the same profession. **CHAS. E. HALL.** See offer on page 267.

Smiles.

I KNEW THEM EYES WUZ ELLEN'S.

They driv' a kerridge to the door
An' out of it a lady got,
All dressed in silks and furbelows,
An' walked right up to whur I sot.
Ses she, "I come from Obedstown,
I'm huntin' fer a Cap'n Brown."
I looked, and when her face I see,
Thinks I, "No, marm, you kain't fool me!"
I knowed them eyes wuz Ellen's.

My darter, married twenty year
An' gone to live in Idyho;
She'd growed an' changed, but then, law me!
Queer of a mother wouldn't know—
Her hair was tetch'd a bit with gray
An' mebbly she wan't quite so gay;
A leetle stouter in her size;
Yit, as I looked in them blue eyes,
I knowed them eyes wuz Ellen's.

An' so I riz right up to once
An' grabbed her close an' hilt her tight,
An' she sez "Mar!" an' I sez "Nell!"
An' then we hugged with all our might;
For time might ketch me on some things,
Consid'ri' all the change it brings;
Bnt when I looked I knowed her shore—
I seen my baby's eyes once more—
I knowed them eyes wuz Ellen's.

—Earnest McGaffey.

RABBIT'S-FOOT LUCK.

Do I believe dat dis yere rabbit's foot brings me luck?" repeated the old darky in shrill tones as he softly brushed his chin with it. "Why, sah, if it hadn't a bin fur dis fut dar's no tellin' what might a happened to me. Look at dat Julius Tompkins. He 'lowed dat a rabbit's fut was no good, an' whar is he now? Went up to Louisville to work in a pork-house an' died wid small-pox."

"Yes."
"An' look at de time I was on dat coal-barge at Mobile. Had dis yere fut haugin' to my neck by a blue string, an' some of dem niggers called me 'Hoodoo,' an' was gwine to take it away from me an' feed it to a dog. When dat barge struck a snag an' went to de bottom, who got saved? Dis yerepusson an' nobody else. Four of 'em went right down like rocks, jist like dey might hev expected."

"Lucky for you."
"Yes, sah, an' how was it de time de ghost of Peter Robbins cum scroonin' frew our naborhood? Pete he was hung up at Greenville, you know. I was right dar' an' seed it all, an' when he swung off I kissed dis rabbit's fut fo' times. Some of de folks laughed at me, an' called me a fool nigger. But how did it cum out? Peter's ghost cum up to Langville an' scart everybody outer his shoes—everybody but me. Nebber knocked on my doah one single time, an' nebber left no smell of brimstone 'round my cabin. Couldn't do it, you know. Dis yere fut was pawin' him away all de time."

"Will any rabbit's foot bring a person luck?"
"No, sah! No, sah! Dat's de reason I wouldn't sell dis one fur a millyun dollars in gold! De circumstances has got to be right. You has got to find your rabbit in de full of de moon. De wind has got to be from de east. Dat rabbit has got to be huntin' fur jimweed to cure a cataract in his left eye. You has got to creep up an' kill him wid a stick dat a dead man has carried, an' when you ar' takin' off de fut you has got to h'ar a ghost cry out down in de cotton. Oh, no, sah. Doan you let none of dese yere common niggers 'round yere sell you no common rabbit's futs. Dey wouldn't keep de kyars on de track till you got over to Decatur."

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KNEW MORE THAN HIS PRAYERS.

They begin the classes in some of the public schools nowadays in the rudiments of civil government at a very early age. And it seems that the young people get, on the whole, a pretty correct idea of the way we are governed. A teacher, who, by the way, is rather fond of English things, was orally instructing a class the other day in the foundations of political science. She had given her young pupils a very interesting lecture about the British system of government. And then she asked the boy at the head of the class:

"And now, Johnnie, what are the men called who govern or rule over us in this country?"

"Kings!" said Johnnie, promptly.

"Oh, no. Tell me, the next one, by whom are we governed?"

"Queens!"

"No! Next boy."

"Jacks!" said the next boy.

And he was not promoted to the head of the class.—*Boston Transcript.*

HIS JUDGMENT CORRECT.

"Ah! Mr. Greene?" he said, as he shook hands with a gentleman from New Haven as they met in Union square, according to the *New York Sun*.

"Glad to see you, Mr. Smith."

"By the way, I sent you a young man a few months ago."

"You did."

"I recommended him as a hustler."

"Yes."

"Well, I wanted to ask you how he developed. When I pass judgment on a man I like to follow him up and see if I was right or wrong."

"Oh, you were right in this case."

"Then he was a hustler?"

"Indeed he was. When he had been with me three months he ran away with my daughter. I took them home, extended my blessing, and now he has gone with my wife and \$10,000 in cash. You make no mistake in your man, sir. He is at present outthrusting five good detectives."

THE WAY IT IS DONE.

Minister (entering country editor's office)—
"You promised to publish that sermon I sent you on Monday, but I do not find it in the paper."

Editor—"I sent it up. It surely went in. What was the name of it?"

Parson—"Feed My Lambs."

Editor (after searching through the paper)—
"Ah—yes—um—here it is. You see, we've got a new foreman, and he put it under the head of 'Agricultural Notes,' as 'Hints on the Care of Sheep.'"—*Times-Democrat.*

A POPULAR DANCE.

First Sweet Girl—"Oh, you should dance Strauss' new minuet waltz; it's perfectly lovely!"

Second Sweet Girl—"I hate those poky old minuet figures."

F. S. G.—"Oh, it isn't like the old minuet at all. It's too lovely for anything! You waltz awhile, and then the music changes and you go off in a corner and hug."—*New York Weekly.*

A PLEASANT BIT OF INFORMATION.

Little Brother—"Can't you walk straight, Mr. Mangle?" Mr. Mangle—"Of course I can. Why do you ask?" Little Brother—"Oh, nothin'; only I heard sister say she'd make you walk straight when she married you. And ma said she'd help her."—*Yankee Blade.*

HE DID NOT APPRECIATE IT.

"I hear," remarked Gilroy to a friend, "that you received an ovation at your lecture the other night."

"Yes," replied the lecturer, "I did receive an ovation, but some of the ova were very stale."—*Time.*

AN HONORABLE CALLING.

In all ages, the profession of medicine has been held in honor. Each of the other learned professions is more or less dependent upon this one. The lawyer must be versed in Medical Jurisprudence, and the clergyman must know "to minister to a mind diseased." And just now the writers of fiction seem to be encroaching upon the doctors' "preserves." With slight alterations or additions, for example, a few illustrations, many a modern novel might be made to do service as a medical work. However, doctors' lives are not all sunshine. They must expect many disappointments. The search for the elusive bullet, though, apparently, equally fascinating, is often not more successful than that for the North Pole. Science has enabled them to determine just where it is, but, alas, they cannot reach it. Then they are obliged to depend upon the charity of editors and publishers for advertising, their "Ethics" not allowing them to pay for it. And worst of all, the chronic cases, baffling and setting at naught their skill. This is sad for the doctors, but let us not waste our sympathy upon them, let us rather point out a way of escape to the patients given over by them. This is found in the Compound Oxygen Treatment of Drs. STARKEY & PALEN. Being inhaled, it is absorbed into the blood, and distributed over the whole body, imparting new strength and vigor, and assisting nature. Over one thousand physicians are using it in their practice. You will find testimonials from these, as well as from great numbers of patients, besides, a full account of Compound Oxygen, in our Treatise of 200 pages, a carefully written work, the result of years of study and experience. Sent free. Address Drs. STARKEY & PALEN, 1529 Arch St., Philadelphia, Pa., or 120 Sutter St., San Francisco, Cal.

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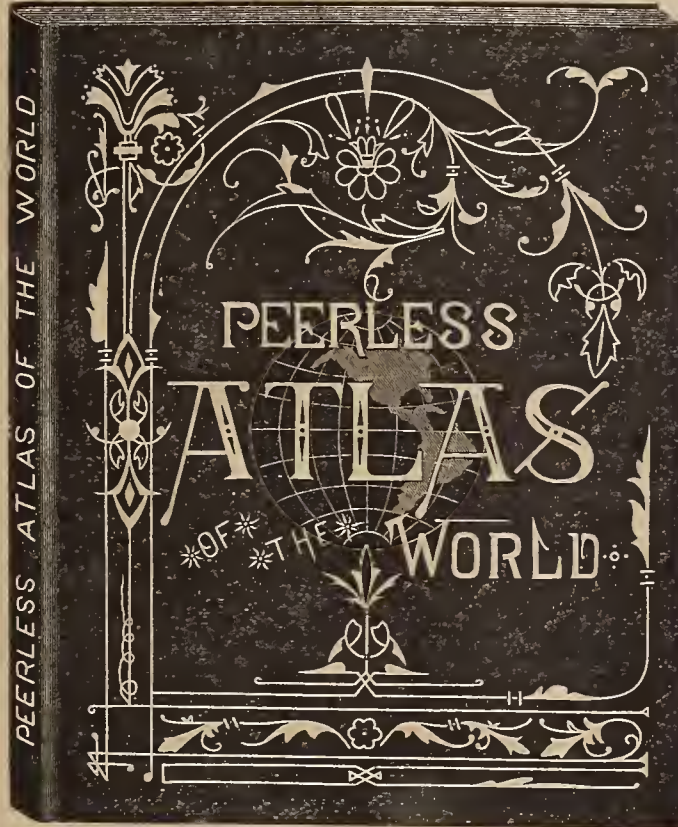
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Common.....	5 @ 8	5 @ 8	5 @ 6
GRAIN.			
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" No. 2w'nt'r	31 @ 31 1/2	37 @ 39 1/2	33 @ 42
Corn, ".....	24 @ 26 1/2	29 @ 32	30 1/2 @ 31 1/2
Oats, ".....			
LIVE STOCK.			
Cattle, Extra.....	5 10 @ 5 40		
" Shippers.....	3 45 @ 5 00	4 30 @ 5 00	2 00 @ 3 25
" Stockers.....	2 40 @ 3 70	4 00 @ 4 30	
Hogs, Heavy.....	4 05 @ 4 40	4 40 @ 4 90	3 00 @ 4 75
" Light.....			
Sheep, com. to good	4 50 @ 5 90	5 00 @ 6 75	2 00 @ 3 00
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PROVISIONS.			
Lard.....	6 20	6 45	5 1/2 @ 5 1/2
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BENNETT'S IMPROVED STUMP-PULLER
Sent anywhere in the U. S.
On Three Days Trial.
On runners. Worked by 2 men.
LIFTS 20 to 50 TONS.
Five sizes. Price, \$35 to \$70.
Circulars free. Man'd by
H. L. BENNETT,
Westerville, O.

Always mention this paper when answer-
ing advertisements, as advertisers often
have different articles advertised in several
papers.

YOUR ADDRESS ON A POSTAL CARD
BRINGS YOU PROMPTLY 52 SAMPLES
AND SELF-MEASUREMENT BLANKS
EVERY GARMENT IS CUT TO ORDER
PANTS \$3.75 TO \$5.00
SUITS \$13.75 TO \$21.00
PLYMOUTH ROCK PANTS CO.
BOSTON, MASS.

Address all mail to Headquarters, 11 to 17
Elliot St. Annex, 695 Washington St., and 18
Summer St., Boston, Mass.
Branches: 285 Broadway, New York; 943 Penn.
Ave., Washington, D. C.; 72 Adams St., Chicago,
Ill.; 914 Main St., Richmond Va.; 225 E. Baltimore
St., Baltimore, Md.; 110 Canal St., New Orleans, La.;
104 Montgomery St., Montgomery, Ala.; 39 White-
hall St., Atlanta, Ga.; Burnside Bldg., Worcester,
Mass.; Hotel Gilmore, Springfield, Mass.; 188 West-
minster St., Providence, R.I.; Old Register Bldg.,
New Haven, Conn.; 106 No. Main St., Concord,
N.H.; 170 River St., Troy, N.Y.

TIN PLATE STEEL PLATE GALVANIZED AND COPPER SHINGLES.
MANUFACTURED BY THE
NATIONAL SHEET METAL ROOFING CO.
510 East 20th St., New York City.
Are, without any exception, the best in the
world. Descriptive circular free.
This advertisement appears every other week.

Platform Wagon, \$50. The Elkhart Carriage and Harness Mfg. Co.
For 16 Years have sold to consumers at
wholesale prices, saving them the
dealers' profit. Ship anywhere for ex-
amination before buying. Pay freight
charges if not satisfactory. Warranted
for 2 years. 84-page Catalogue FREE.
Address **W. B. PRATT, Sec'y,**
Elkhart, Indiana.

Pennsylvania Agricultural Works, York, Pa.
Farquhar's Standard Engines and Saw Mills.
Send for Catalogue. Portable, Sta-
tionary, Traction and Automatic En-
gines a specialty. Warranted equal or
superior to any made.
Address **A. B. FARQUHAR & SON, York, Pa.**

THE MARION MALLEABLE IRON CO.
HAYING TOOLS.
WRITE FOR CIRCULARS AND PRICES.
Mention this paper.
MARION, OHIO.

IDEAL
IMPROVED Made of best ma-
terial by skilled
workmen, built on correct prin-
ciples and fully warranted; 17 YEARS'
EXPERIENCE. Sent on trial. Write
for Circular and Price.
Stover Mfg Co. Freeport, Ill.
Say you saw this in Farm and Fireside.

SEDGWICK FARM FENCE
PRICES REDUCED

Best Fences and Gates for all
purposes. Free Catalogue giving
full particulars and net prices.
Ask Hardware Dealers, or write
SEDGWICK BROS., RICHMOND, IND.
EDWARD SUTTON, Eastern Agent,
300 Market Street, PHILADELPHIA, PA.
Mention Farm and Fireside.

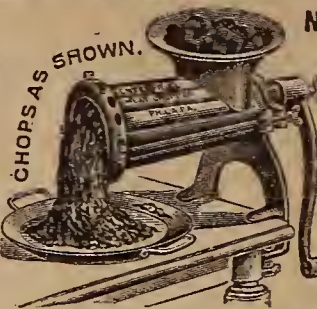
MAST, FOOS & CO.
SPRINGFIELD, OHIO.
MANUFACTURERS

IRON TURBINE OF THE WIND ENGINES
Strong and Durable. Will not Swell,
Shrink, Warp or Rattle in the Wind.
BUCKEYE FORCE PUMP
Works easy, and throws a constant
stream. Has Porcelain Lined and Brass
Cylinders. Is easily set. Is the Cheapest
and Best Force Pump in the World for
Deep or Shallow Wells. Never freezes
in winter. Also manufacturers of the
BUCKEYE LAWN MOWERS,
Buckeye Wrought Iron FENCING,
Cresting, etc. Write for Circulars and Prices.
A CHILD CAN USE THEM.

ENTERPRISE MEAT CHOPPERS, BEST IN THE WORLD. GUARANTEED TO CHOP, NOT GRIND THE MEAT.

FOR CHOPPING
Sausage Meat, Mince
Meat, Hamburg Steak
for Dyspeptics, Beef
Tea for Invalids, &c.

Farm and Fireside says:
"It is the only Meat Chop-
per we ever saw that we
would give house room. It
has proven such a very use-
ful machine that we want
our readers to enjoy its bene-
fits with us."



No 10 Chops 2 lbs. per minute
Price, \$3.00.
12 Chops 2 lbs. per minute
Price, \$2.50.
22 Chops 3 lbs. per minute
Price, \$4.00.
32 Chops 4 lbs. per minute
Price, \$6.00.

American Agriculturist says:
"We have given this Meat
Chopper a thorough trial with
most satisfactory results.
They excel anything of the
kind made in either hemisphere."

ENTERPRISE SAUSAGE STUFFER and LARD PRESS. 3 SIZES.

The Easiest Working and Most Durable
Machines in the market. Are Unex-
celled for Butchers and Farmers' Use
in Stuffing Sausages and will be found
useful for Pressing FRUIT and many
other purposes.

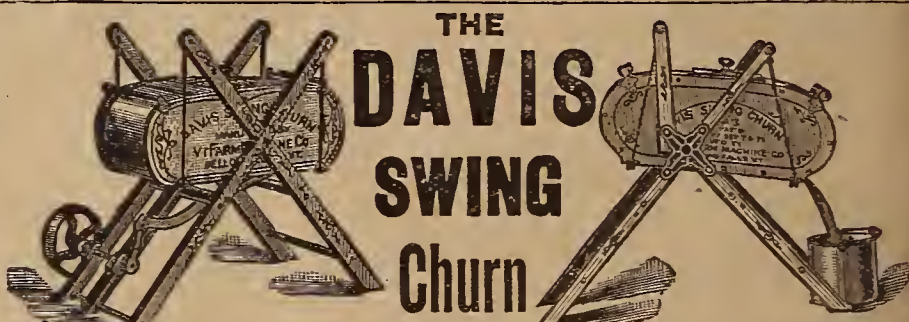
Our Choppers and Stuffers are
Sold by the Hardware Trade.
If you cannot find a CHOPPER
STUFFER in your Hardware
Dealer, send
money to us
and we will
ship by first
fast train.



No. 15—2 qts. \$3.00
25-4 " 5.00
35-8 " 6.00

SEND FOR
Catalogue, Free

Enterprise
M'f'g Co.,
Philadelphia.



For Power or Hand. Greatest Concussion. Churns most thoroughly. Churns easiest.

From the Largest Butter Factory in Mass.
I have used the Davis Swing Churn for the last eight years—Nos. 8, 11 and 13—with the best of results,
securing the First Premium at Rhode Island State Fair in 1883. The Gold Medal, two First and one
Second Premium at the Bay State Fair in Boston, 1889, with butter made with these Churns. Cannot
speak too highly of the Churn.
Conway, Mass., Nov. 25th, 1889. Yours truly, W. A. PEASE, Supt. Conway Co-operative Creamery.

From the Largest Butter Factory in Conn.
Having used the Davis Swing Churns for nearly seven years in our factory, we take pleasure in saying
that they give perfect satisfaction, and we consider them pre-eminent over any Churn used for Creamery
purposes. Melrose, Conn., Feb. 19th, 1890. A. M. BANCROFT, Supt. Ellington Creamery Co.

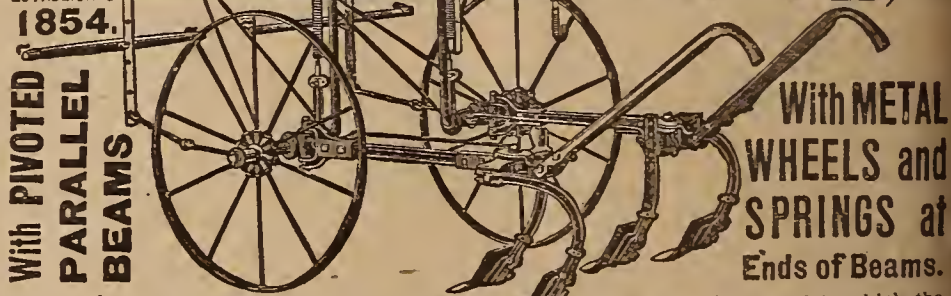
Eighty lbs. in Davis Swing Churn as easy as 40 lbs. in Barrel Churn.
The No. 8 Churn purchased of you gives entire satisfaction. We churn 80 lbs. as easily as we did 40
pounds in the Barrel Churn. The self-ventilation not only saves much trouble, but improves the quality.
No. Hartland, Vt., November 10, 1887. Yours truly, G. GATES & SONS.

Tried the Barrel and Davis Swing Churns Together.
The Davis Swing Churn I purchased of you in the spring of 1889, far exceeds my expectation. I was
strongly inclined toward a barrel churn, but after using both thoroughly shall take the Davis Churn
every time. It is easy to operate, easy to clean, and brings just the right kind of butter every time.
Derby Center, Vt. Yours truly, M. A. ADAMS, Clover Hill Farm.

Quicker and Easier than the Barrel Churn.
The Davis Swing Churn is a grand contrivance, it is both easier and simpler to work than the ordinary barrel
churn, and brings the butter quicker and better and washes thoroughly.
Naiwawai, New Zealand, August 8, 1883. Yours faithfully, F. BENTON, Jun.

SEND FOR ILLUSTRATED PAMPHLET. FREE TO ALL.
VERMONT FARM MACHINE CO., Bellows Falls, Vt.

NEW BUCKEYE SUNBEAM CULTIVATOR
Manufactured by **P. P. MAST & CO.**
SPRINGFIELD, O.



With METAL WHEELS and SPRINGS at Ends of Beams.
This Cultivator has the rear ends of the beams pivoted to a Cross-head to which the
Shovel Standards are attached and a secondary beam or rod pivoted to the coupling in
front and to the Cross-head in the rear, by which the Shovels are carried parallel with the axle,
whatever may be the position of them in being moved sideways. The spring at the front end of the
beams supports them when in use, and enables the operator to move them easily from side to side and
assists in raising when he wishes to hook them up while turning at the end of the row. We attach
these Beams also to our Riding and Tongueless Cultivators. This Cultivator has no equal in
the market, and can not fail to be appreciated by any farmer who sees it. We also manufacture the
BUCKEYE DRILL, BUCKEYE SEEDER, BUCKEYE CIDER MILLS and HAY RAKES.
Branch Houses: Philadelphia, Pa.; Peoria, Ill.; St. Paul, Minn.; Kansas City, Mo.; and
San Francisco, Cal. Write for Circular to either of the above firms or to
P. P. MAST & CO. SPRINGFIELD, OHIO.

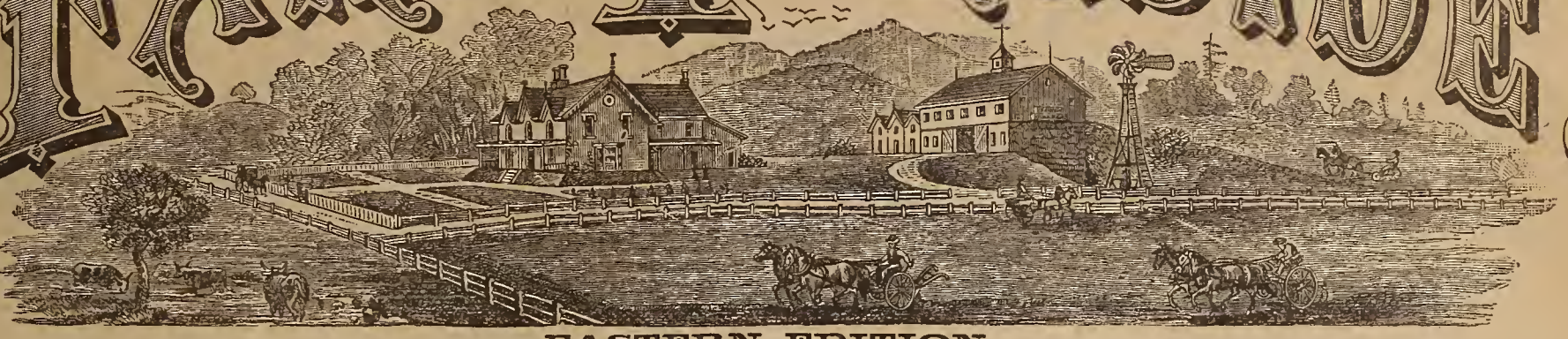
THE KEYSTONE HAY LOADER

Will load a ton of hay in 5 minutes. You will
make hay easily and quickly, and save help.
Often pays for itself in one season. 10,000 sold.
Fully warranted. Loads loose small grain also.
KEYSTONE MFG. CO., Sterling, Ill.
USE THIS HAY LOADER. [Mention this paper.] Branch Houses conveniently located.

GRIND YOUR OWN Bone, Meat, Oyster Shells,
Graham Flour & Corn. In the
\$5 HAND MILL (Patent).
100 per cent. more made
in keeping Poultry. Also **POWER MILLS** and
FARM FEED MILLS. Circulars and testimonials
sent on application. **WILSON BROS., Easton, Pa.**

PROFITS FOR FARMERS.
A storm is coming. Buy Oborn's Hay
Carriers and save your hay. Thou-
sands in use. We make the latest and
best improved Hay Tools. Save time.
Save money by sending for CATALOGUE.
Box G. **OBORN BROS., Marion, Ohio.**
Mention this paper.

FARM & FIRESIDE



EASTERN EDITION.

VOL. XIII. NO. 16.

PHILADELPHIA, PA., and SPRINGFIELD, OHIO, MAY 15, 1890.

TERMS 50 CENTS A YEAR.
24 NUMBERS.

The Circulation of FARM AND FIRESIDE.
this issue is

250,800 COPIES.

The Average Circulation for the 10 Issues of
the first 5 months of this year has been

250,730 COPIES EACH ISSUE.

To accommodate advertisers, two editions
are printed. The Eastern edition being
100,000 copies, the Western edition
being 150,500 copies this issue.

Farm and Fireside has the Largest Circulation
of any Agricultural Journal in the World.

Current Comment.

COTTON-SEED oil producers are making an absurd objection to the compound lard bill. They claim that the proposed internal revenue tax of two mills per pound on compound lard would be the imposition of a burden on the cotton planter for the benefit of the hog raiser. Since compound lard is composed, or supposed to be, of one half lard, one fourth beef stearine and one fourth cotton-seed oil, the tax would be twice as great on lard as on cotton-seed oil, and the absurdity of their claim appears at once. The so-called burden would be twice as heavy on the hog raiser as on the cotton planter. As the cotton-seed oil used for adulterating lard passes through the hands of the cotton-seed oil trust and the Chicago cattle combine, it is not likely that the tax would affect the planter in the least. The compound lard bill is aimed at adulteration and trusts, and not against farmers in any part of the country. It is in the favor of consumers and of the producers of pure food.

SECRETARY RUSK has sent out to the press a circular letter on agricultural depression, its causes and possible remedies, that has attracted wide attention and excited both commendation and criticism. The secretary attributes the prevailing depression to a combination of causes. He does not attempt to enumerate them all, but to call attention to some of the main ones. These he divides into two classes. First: Those causes inherent in the farmers themselves, and for which they alone can provide a possible remedy. Second: Those over which the farmer himself has no direct control, and the remedy for which must be provided, as far as possible, by law, and for such legislation the responsibility devolves upon the legislative bodies of the states and of the nation.

Under the first class he briefly speaks of careless culture, lack of business-like methods, lack of study of markets and questions of supply and demand, the ownership of more land than the owner can properly cultivate, etc. These causes the farmer can remove by availing himself of the information supplied to him through different channels.

Under the second class, the secretary speaks of farm mortgages, transportation over country roads as well as railroads,

the middleman, gambling in farm products, controlling combinations, and finally, of what he considers one of the gravest causes, the importation of agricultural products in direct competition with those produced on our own soil.

The imports of agricultural products estimated at prices paid by the consumers, are about equal the agricultural exports estimated at prices paid to the farmer. The agricultural imports sold in competition with home products amount to nearly one hundred and fifteen million dollars, all of which could be produced on our own soil. From 1850 to 1889 the imports of agricultural products have increased from \$40,000,000 to \$356,000,000. This is an increase of nearly 900 per cent, while the population has increased during that period less than 300 per cent. This is remarkable in face of the fact that this is pre-eminently an agricultural country, and that over 70 per cent of its total exports are farm products. During the last decade, in which the greatest increase of these imports has taken place, there has been a steady decrease in the prices of home-grown products. The conclusion is that, in the line of farm products, with the exception of cotton, competition with cheaper foreign labor has lowered the prices of our chief farm products.

Our surplus of wheat, the price of which is forced down by the competition of Russia and India, regulates the price of the whole crop. The foreign market for our best cattle and pork is hampered by obstructive measures. The secretary says that under such circumstances there can be but one cause assignable for the neglect by American farmers to turn their attention to other crops in the line of such agricultural products as we now import, and that is in this they would meet an even more overwhelming and disastrous competition than they are now confronted with, in the raising of cereals and livestock. Obviously, then, the only course possible to enlightened statesmanship, is to assure to the farmer adequate protection in the diversification of his crops and the production of a larger proportion of the articles which we now import.

The imports referred to include sugar and molasses, animals and their products, fibres, breadstuffs, fruits, hay, etc., the far greater part of which, amounting to about \$250,000,000, could, with proper encouragement, be produced on our own soil. These imports do not include the \$90,000,000 paid for coffee, tea and cocoa, which cannot be produced here, as stated by some of the secretary's critics in their endeavor to misrepresent him. These critics also state that the American farmer does not suffer from foreign competition on her own soil. The statistics furnished by the secretary show that \$115,000,000 worth of agricultural imports are now brought into this country and sold in competition with our farmers.

After a discussion of foreign markets, reciprocal concessions and the necessity of stamping out contagious diseases of animals, the circular is closed with a few pointed remarks on the subject of taxation. The cost of supporting the government needs to be most equitably adjusted among the different classes of the

people. The burden of local taxation presses heavily on farm property. In all ways the principle of taxation should be to place the burden of maintaining the government, whether state, municipal or national, upon the luxuries and comforts which the wealthy enjoy, and to reduce it to a minimum in its application to the hardly-earned property of the poor man.

MR. J. M. SMITH, president of the Wisconsin State Horticultural Society, who, as a successful gardener, has hardly an equal in America, comes out in the April number of *American Gardener* with a strong "protest against the novelties." The following is an extract:

There is no part of my entire year's work that I attend to with such a dislike as the selection of seeds and plants. There is occasionally a new variety of vegetable or fruit that is a decided acquisition, and we are perfectly willing to pay something extra to get it. But what about this endless host that come and go like summer showers? How shall we tell whether we are getting something really valuable or something that is even poorer than the old standard varieties? After studying a great number of catalogues, and selecting a few of the new varieties of seeds or plants, as a general rule, I find at the close of the season, if not sooner, that I have made a mistake, and that the so-called new sorts are not so good as old friends. I know of but one way to do, and that is to stick closely to the old, standard varieties.

Take the strawberry as an example. I got a few Wilson plants in 1860 or 1861. I soon found that, valuable as they were, and still are, where properly cared for, they were not absolutely perfect, although they were a great improvement over any variety then in existence. Soon new varieties came with every spring and fall, and I commenced buying and testing them; and scarcely a year has passed since that time, that I have not plowed under from one to a dozen new varieties that I had spent time and money upon. To-day I can say that I have never had any strawberry plants that were equal to the Wilson, in all respects, unless it may be some of those I am now testing.

Let me be distinctly understood. I do not object to new and valuable varieties, but I do object to such an avalanche every year, with so small a proportion of any true value.

There can be no doubt that the novelty business is being overdone, but we note with thorough satisfaction the indications of a reaction. The farming classes, for one thing, are at present less able to pay out money for things of at least uncertain value, and they also have become wiser by bitter experience. The glowing descriptions and monstrous, high-colored chromos of the professional novelty-monger do not draw any more to the same extent that they used to, and the introducers "for revenue only" begin to find out that there is less pay and profit in their novelties than formerly.

No, we do not object to new and valuable novelties; we rather believe in them, well knowing that many cultivators delight in testing things that from an honest description appear promising. But there is a method of describing and picturing novelties which in itself is suspicious, and suggests caution. As examples of this, let us mention a Japanese bush fruit introduced as "the chance of a lifetime," and a berry that "will prove a benefit to mankind from now until eternity," or the dewberry described as the "most delicious

of all berries, and one of the most ornamental of all climbing vines." The lavish use of superlatives is not in keeping with truthfulness, and not even with good taste.

The seed trade itself should officially set down heavily upon such extravagance of a few of its members, following herein the Society of American Florists, for the sins of the few will surely be visited on the whole body by creating a universal distrust and disgust among the seed buyers against novelties. And let the respectable class of seedsmen (by far the majority) set a good example by scrupulously avoiding the use of superlatives, and gross exaggerations generally, in their catalogues. This will gain at once the confidence of buyers.

THOSE of our readers who are interested in raising hemp or flax for the fibre, should send to Hon. J. M. Rusk, Secretary of Agriculture, Washington, D. C., for the special report on the fibre industry, recently published for free distribution by the department. It is an illustrated pamphlet of over one hundred pages, and contains the results of special investigations on the fibre industry in Europe and the United States. It contains much information that is very timely, as the binder-twine question has turned the attention of the people of this country to the home production of fibre. The report contains chapters on ramie and jute, but the most of it is devoted to hemp and flax, both of which can be grown successfully over a wide extent of territory in this country. It is estimated that by the substitution of native flax and hemp for foreign fibres, our farmers could save to this country \$26,000,000 out of \$44,000,000 now paid for imported fibres and their manufactures.

Home production of fibres, for which there is an increasing demand, would help diversify our industries and reduce the surplus of other farm crops, which is one of the causes of the prevailing low prices. If we continue to depend on foreign fibre, an association of cordage manufacturers will control, as it is reported to be doing now, the importation of raw material, and will fix prices on the manufactured products. The development of the industry here will lessen the danger of a fibre trust. Some are earnestly advocating that fibres should be put on the free list in order that the farmer can get twine cheaper. If this country is going to depend on foreign countries for fibres, the sooner they are put on the free list the better, but putting them on the free list does not insure the farmer that he is going to get twine any cheaper, as some of its advocates are trying to make him believe. The fibres would have to run through a gauntlet of importers, with whom the formation of a trust is an easy matter. We believe that in the end, the farmer will get better and cheaper twine if the fibres are produced at home, and that the development of the industry will benefit the country in other ways. In fact, the best twine on the market to-day is that made from native fibre, and the manufacturers advertise it as an American product raised by American farmers.

FARM AND FIRESIDE.

ISSUED 1st AND 15th OF EACH MONTH BY
MAST, CROWELL & KIRKPATRICK.

THIS PAPER HAS BEEN ENTERED AT THE POST-OFFICE
AS SECOND-CLASS MAIL MATTER.

TERMS OF SUBSCRIPTION:

One Year, - (24 Numbers), - 50 Cents.
Six Months, - (12 Numbers), - 30 Cents.

The above rates include the payment of postage by ns.
Subscriptions can commence any time during the year.
Send for Premium List and see premiums
offered for obtaining new subscribers.

Payment, when sent by mail, should be made in
Express or Postal Money Orders, Bank checks or
Drafts. WHEN NEITHER OF THESE CAN BE PROCURED,
send the money in a registered letter. All post-
masters are required to register letters whenever re-
quested to do so. Do not send checks on banks in
small towns.

Silver, when sent through the mail, should be care-
fully wrapped in cloth or strong paper, so as not to
wear a hole through the envelope and get lost.
Postage stamps will be received in payment for sub-
scriptions in sums less than one dollar.

The date on the "yellow label" shows the time to
which each subscriber has paid.

When money is received the date will be changed,
which will answer for a receipt.

Discontinuances. Remember that the publishers
must be notified by letter when a subscriber wishes
the paper stopped, and all arrearages must be paid.
Do not fail to give your post-office address.

When renewing your subscription, do not fail to
say it is a renewal. If all of our subscribers
will do this, a great deal of trouble will be avoided.
Also, give your name and initials just as now on the
yellow address label; don't change it to some other mem-
ber of the family; if the paper is now coming in your
wife's name, sign her name, just as it is on label, in your
letter of renewal. Always give your post-office address.

We have an office at 927 Chestnut Street, Philadel-
phia, Pa., also at Springfield, Ohio. Send your
letters to the office nearest to you and address

FARM AND FIRESIDE,
Philadelphia, Pa., or Springfield, Ohio.

The Advertisers in this Paper.

We believe that all the advertisements in this paper
are from reliable firms or business men, and do not
intentionally or knowingly insert advertisements
from any but reliable parties; if subscribers find any
of them to be otherwise we should be glad to know it.
Always mention this paper when answering adver-
tisements, as advertisers often have different things
advertised in several papers.

Our Farm.

AGRICULTURAL CHEMISTRY

From the Standpoint of the Practical Farmer.

BY JOSEPH (TUSCO GREINER).

No. 33.

TABLE OF ANALYSES.—Continued
from last number, showing
composition and approximate
chemical value of various fer-
tilizing materials:

26. SALTPETRE.

(Nitrate, or nitrate of potash, pure.)

Nitrogen.....14.00 pr.ct.
Potash.....47.00 pr.ct.
Chemical value per ton, \$100.00.

27. SALTPETRE WASTE FROM GUNPOWDER WORKS.

Nitrogen.....2.45 pr.ct.
Potash.....18.00 pr.ct.
Chemical value per ton, \$29.93.

28. SEAWEED.

(Variable.)

Nitrogen.....1.5 pr.ct.
Phosphoric acid.....0.3 pr.ct.
Potash.....2.0 pr.ct.
Chemical value per ton, \$6.50.

29. SLAG (THOMAS OR BASIC) OR ODORLESS PHOSPHATE.

Phosphoric acid.....21.00 pr.ct.
Chemical value per ton, \$16.80.

30. S. C. ROCK (GROUND, FLOATS.)

Phosphoric acid.....27.20 pr.ct.
Chemical value per ton, \$10.68.

31. S. C. ROCK, DISSOLVED.

Phosphoric acid available.....11.60 pr.ct.
" insoluble.....3.65 pr.ct.

" " total.....15.25 pr.ct.
Chemical value per ton, \$20.00.

32. SULPHATE OF AMMONIA.

Nitrogen.....20.50 pr.ct.
Chemical value per ton, \$7.90.

33. SULPHATE OF POTASH.

Potash.....35.05 pr.ct.
Chemical value per ton, \$13.14.

34. SULPHATE OF POTASH, HIGH GRADE.

Potash.....52.95 pr.ct.
Chemical value per ton, \$63.51.

35. DOUBLE SULPHATE OF POTASH AND MAGNESIA.

Potash.....26.50 pr.ct.
Chemical value per ton, \$31.80.

36. TANKAGE.

Nitrogen.....7.55 pr.ct.
Phosphoric acid.....14.20 pr.ct.
Chemical value per ton, \$41.26.

37. TOBACCO DUST.

Nitrogen.....3.00 pr.ct.
Phosphoric acid.....2.10 pr.ct.
Potash.....9.05 pr.ct.

Chemical value per ton, \$20.40.

38. TOBACCO STEMS.

Nitrogen.....2.25 pr.ct.
Phosphoric acid.....0.60 pr.ct.
Potash.....6.50 pr.ct.

Chemical value per ton, \$13.00.

39. WOOD ASHES, UNLEACHED, HARD WOOD.

(Very variable, according to kind of wood from
which it is made, and state of preservation.)

Phosphoric acid.....1.50 pr.ct.
Potash.....6.45 pr.ct.

Chemical value per ton, \$10.14.

40. WOOD ASHES, LEACHED, HARD WOOD.

Phosphoric acid.....1.80 pr.ct.
Potash.....1.75 pr.ct.

Chemical value per ton, \$4.03.

41. WOOD ASHES, CANADA.

(Variable.)

Phosphoric acid.....1.85 pr.ct.
Potash.....5.68 pr.ct.
Chemical value per ton, \$9.75.

42. WOOL WASTE.

(This material varies very greatly, some sam-
ples having as high as 17 per cent nitrogen
having a chemical value of \$30 or up-
wards per ton.)

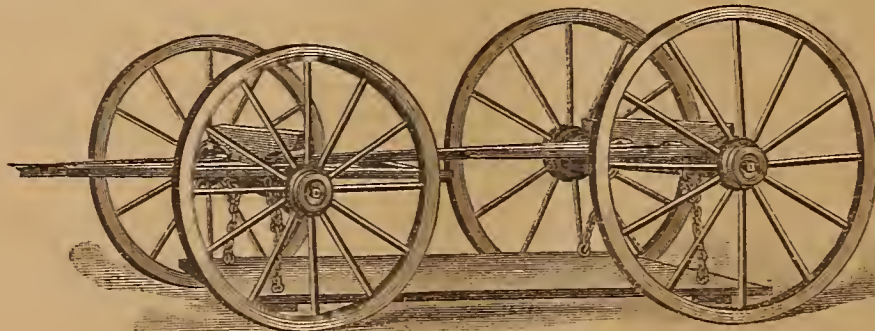
Nitrogen.....1.20 pr.ct.
Phosphoric acid.....0.50 pr.ct.
Potash.....3.00 pr.ct.
Chemical value per ton, \$4.80.

In the above table we find most of the
common materials that are found to be
available for manurial purposes. The
chemical value is almost always a num-
ber of percent lower than the agricultural,
or real value in the field. Mixed manu-
factured fertilizers I have not mentioned,
because there are hundreds of brands of
entirely differing composition; and every
buyer can make his own calculations as to
the value of a certain brand on the basis
of the printed analysis. In some places
one or the other of the substances named
can be purchased at a much lower rate
than the chemical value given, and it will
pay any farmer, who is a manure buyer,
to be constantly on the watch for bargains
in this line, and not neglect to purchase
whenever he can get an article available
for plant food that is offering at an un-
usually low rate.

FLORIDA AS IT IS.

I have lately been very much interested
in the series of articles running in FARM
AND FIRESIDE on "Agricultural Chemis-
try," and the frequent allusion to the Flor-
ida deposits of phosphate rock have, no
doubt, aroused an interest in the minds
of many of your readers as to the extent
and value of these. It is being claimed
by many as a "new discovery," but this
is a fallacy. It has been known for many
years that we had rich deposits of min-
eral phosphoric acid, and geologists, chem-
ists and other men of intelligence have
written upon it and talked about it for
many years past. I have been employed
as an expert in prospecting and testing
deposits on land belonging to individual
holders for the past six months, and have
seen nearly every section and neighbor-
hood where it is known to exist. I have
talked with all our so-called "phosphate
kings" since the "boom" began, making
headquarters for some time at Ocala, where
the first companies were organized. The
excitement has fully equalled anything I
ever witnessed in the West, in the "Black
Hill" days or "Pike's Peak" period. And
it has not yet subsided.

I have samples of "rock" sent to me
daily, through the mails and in other
ways. The latest "find" of an authentic
character is at Orlando, and the au-
thority for this is our state chemist, Prof.
Norman Robinson. But I want to fully
corroborate "Joseph's" surmise, that
Florida has enough of the precious sub-
stance for all time to come. We have
millions of acres and billions of tons of
first-class material, and then we have ten
times as much of the low grade, soft sub-
stance, which I am becoming more and
more convinced has only to be ground up
and composted, as you would ordinary
bone meal, to be available plant food.



TRUCK FOR HAULING STONE.

Nearly every farmer in Florida has
plenty of this latter, or can get it on his
neighbor's farm, where it will cost no
more to procure than the same amount of
muck.

The limits of the present letter would
not allow me to enumerate all the sections
that have this valuable fertilizer. Waldo
has plenty of it right at her doors, on the
Santa Fe lake and river. I have analyzed
some specimens found in this section,
that showed up fully as well as the Dun-
ellon rock. Immense deposits of bone
of prehistoric times are being uncovered,

with what we believe to be "fish" deposit
and extinct marine animal life; conglom-
erate masses of matter, red, yellow, green,
brown and gray, as well as pure white,
mixed with sand and clay, but all highly
charged with phosphoric acid, have been
thrown out of the pits dug for that pur-
pose on the Santa Fe river. The atten-
tion of railroad men has been attracted,
and the building of the proposed road
through this valley will open up again a
region that was celebrated in the days be-
fore the war as a rich and prosperous
section, but which has relapsed into a



DRIVING LINES FOR THREE HORSES.

wilderness since that time, owing to the
lack of transportation and skilled labor.

The late frosts did very little damage in
our central lake region, attested by
lemons, peento peaches and guavas, now
ripening and untouched by the cold. We
look for an average crop of oranges another
year, if the dry weather does not last too
long. We have had the most remarkable
drouth the past winter that was ever
known in Florida, and yet nothing in this
section seems to have seriously suffered.

W. W. BREESE.

SPRING MANAGEMENT OF STRAWBERRIES.

At a meeting of Summit county horti-
culturists, a gentleman inquired as to the
time to remove the mulch from strawber-
ries. Mr. Crawford said it was the prac-
tice of Mr. Beaver, of Dayton (probably
the best strawberry grower in Ohio), to
remove it as soon as the ground would do
to work, and then cultivate the ground
deeply until just before ripening, when
the berries were mulched with straw. It
had been proved at the Ohio Experiment
Station that ground mulched with straw
or similar material was colder than un-
mulched ground and more susceptible to
frost, and for this reason some growers
removed the mulch early in April and let
the ground warm up, replacing it after
danger of frost was past.

L. B. Pierce said the proper time to re-
move mulch, where it covered the plants,
was just as soon as the plants commenced
to grow. Allowed to grow beneath the
covering, the leaves and stalks would be-
come blanched like celery, a condition
that weakened the plant, from which it
rarely recovered in time to be as product-
ive as those not blanched. He did not,
however, believe in removing the mulch,
as one main object was to conserve moist-
ure and carry the plants by fruiting with

stable manure partly made up of planing-
mill shavings used as bedding. The rows
were then cultivated and at once remulch-
ed, but, he did not think, with the same
material.

C. E. Barnes said the mulch used by Mr.
Knox was rye straw.

Aaron Teepie mulched in the fall with
fine manure between the rows and a very
light layer of straw over the rows. Did
not disturb the mulch or cultivate before
picking in the spring, but pulled up such
weeds as grew through the straw.

H. A. Sackett said it was the practice
among the famous strawberry growers of
Barnesville, Ohio, to mulch heavily with
straw in December, and not remove it
until after picking.

Mr. Crawford said if mulch was allowed
to remain so thickly upon the plants as to

blanch them before uncovering
them, it left them in a very ten-
der condition, and they were
easily killed by a degree of cold
that would not injure well-
hardened plants. They should
be uncovered early. The remov-
ing of mulch from large planta-

tions was a costly job, and its storage
during the period of spring frosts required
additional land close beside the straw-
berry patch.

Mr. Beaver only cultivated a small
plantation in his garden. E. P. Roe, once
famous as a strawberry grower, used to
remove the mulch, spade deeply between
the rows, and then replace it.

From these opinions and experiences,
the readers of FARM AND FIRESIDE will
see that the mulching of strawberries is a
disadvantage in frosty regions, and during
the time of late frosts subjects them to
additional danger, while at the same time
it is of great advantage a little later in
keeping the soil moist. As regards spring
cultivation, formerly condemned by
many experts, it seems advantageous in
deep, mellow, rich soils where the plants
root deeply and in heavy masses, while it
might be disastrous on light, thin soils
where the roots were less numerous and
nearer the surface.

L. B. P.

DRIVING LINES FOR THREE HORSES ABREAST.

Mr. T. S. Davis, Pennsylvania, describes
his way of driving three horses abreast.
The illustration shows how the lines are
arranged. The cross-lines between the
outside horses are each provided with a
buckle near where they join the main
line, not shown in the cut, for the purpose
of separating them and allowing the main
lines to be done up on the outside. To
ordinary check lines add two straps about
eighteen inches long, with buckle and
loop, and you have all that is necessary.

TRUCK FOR HAULING STONE.

Mr. J. D. Boorum sends a description of
a wagon arranged for hauling heavy
stones. Take two pieces of 2x4 scant-
ling, spike or pin strong planks to them,
and swing this platform with chains
underneath the running-gears of a wagon.

SWEET POTATO CULTURE IN THE SOUTH.

The following method of growing sweet
potatoes has been used by me with very
good results for many years:

First, select a dry, warm spot, having a
southerly exposure. Pulverize thorough-
ly, to a depth of ten inches; then dress
with good stable manure, say, two or
three inches deep. Cover this with soil
about one half inch, then select your seed
carefully, use only large, well-shaped and
matured potatoes. Now lay them on the
bed as thick as they will lie, then cover
with stable manure and soil to a depth of
four inches. Water twice a week with
hot soapsuds. The slips will be ready to
set out in from four to six weeks by this
method. Mine are generally eight or ten
inches high in four weeks. The next step
is to plow and pulverize your ground just
as you would for a heavy crop of Irish po-
tatoes. Throw up into ridges, three and a
half to four feet apart, and if you wish to
produce from four hundred to six hun-
dred bushels per acre, use plenty of any
good fertilizer containing a good per cent
of nitrogen. I use cotton-seed meal and
wood ashes, one thousand pounds of cot-
ton-seed meal and two thousand pounds

of wood ashes. But I always grow a crop of Irish potatoes on it first. After they are dug I then set it with sweet potatoes, which gives me two crops off of the same land every year. To set out the slips, take a light turning plow and split your ridge through the center. Now set your slip in this furrow, against the left-hand side, afterwards throwing the dirt back with the plow, without, however, covering the top leaves of the slips entirely. Slips should be set from six to ten inches apart. Some put two or three slips in the same hill, but one good, strong one is plenty for me. In sandy lands we make a hole with a short, sharp stick, and insert the slips in the hole with the hand, pushing the soil down well around it with the other hand, or foot.

As soon as the vines begin to grow, plow them well two or three times, with a turning plow, double shovel cultivator, or other suitable tool. Keep them clean and the ground mellow until the vines cover the ground. From this time on they will take care of themselves until digging time. In Texas, all potatoes grown from draws or slips are known as "mothers;" they are shorter, rounder and harder than those produced from vine cuttings; but the cultivation is the same in either case. We cannot produce vines without draws; or very many people would much prefer to beg vines from their neighbors every wet day. To set out vines, cut them into suitable lengths and then proceed just as you would to plant slips or draws. If you have plenty of vines, cut into pieces about two feet long, and put as much as possible in the ground; but if vines are scarce, eight or ten-inch lengths will do very well. The only secret of success in sweet potato growing is thorough culture and manuring. Any land that produces Irish potatoes in paying quantities, will do as well in sweet potatoes. W. M. GIBSON.

Texas.

SUB-IRRIGATION AND DRAINAGE.

EDITORS FARM AND FIRESIDE:—In your columns have appeared articles from the pen of the late A. N. Cole, upon the subject of "Combined Drainage and Irrigation," as developed and made use of by him in the growth of fruits and vegetables, also tested in the production of ordinary farm crops.

A five-years' test, four of them years of drouth, and one (the last) a year of excessive rain, proves beyond the possibility of doubt or dispute, the claims of the "New Agriculture" as set forth by him, and that it is the system of common sense and economy, and will yet come into general use, supersede present mistaken methods of drainage, revolutionize agricultural production by producing on one acre as much as is now grown on five, and restore our springs and streams to their original flow and purity by holding in the soil and feeding by slow filtration the waters now lost in surface wash.

The sixth year of its demonstration is now at hand, and you are respectfully invited to visit the "Home on the Hillside," Wellsville, N. Y., about July 1, that you may see the results of the system, note the increase in size and quantity of the productions, and test their superior flavor. To each and every reader of your paper is this invitation extended.

A. P. COLE.

WHAT TO DO WITH DEAD SHEEP AND LAMBS.

Dead animals, generally, are eaten up by hogs, dogs, buzzards and crows. They are not always removed from the place where they died. There is very little sentiment shown upon the occasion of the death of a domestic animal. The family horse, when he dies, may have genuine tears shed by the children of the household, in memorial of a valued and trusted friend. Rarely does the demonstration of respect go further. The faithful horse is, in rare instances, given a burial in the most tender manner, and some testimonial of respect left to mark the spot where he lies.

Some of these monuments to the noble horse are very touching and expensive, indicative of tenderness in grief of a truly worthy character. We always look upon such kindly acts as coming from souls quite in advance of the ordinary. More often than otherwise, the noble horse, no

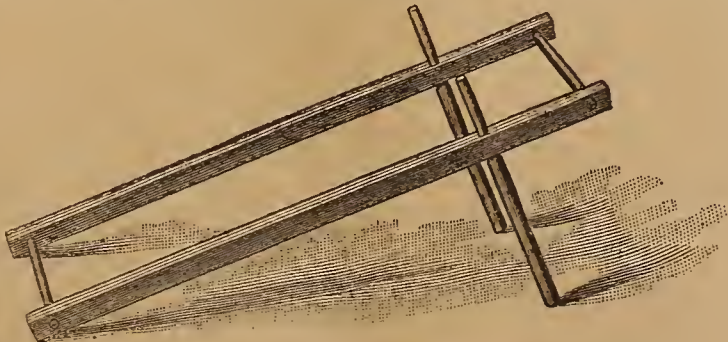
matter how long and faithfully he has served his owner, no matter how well bred or carefully trained or valuable in dollars and cents, to say nothing of those qualities that call for admiration, when it dies, has a log-chain fastened around its neck and a pair of oxen or span of mules yank it out into the public road and off down some hollow to be eaten up. Such a picture is repulsive to any humane person of the most ordinary feelings. The man who does so always feels that he has done the poor, dumb brute and himself an injustice that brings to him self-condemnation.

The inhumanity shown in these things perhaps ends here. But not so with sheep, swine, dogs, cats and fowls, which are known to be the hosts of various hordes of deadly parasites that are not destroyed by the death of their hosts, but are widely distributed and perpetuated by animals and birds that take them into their systems. It is well known that internal parasites are largely on the increase, and annually destroy thousands of sheep and lambs. It is well known, too, that sheep are less healthful on some farms than formerly.

In the early history of sheep raising in this country, no such ailments were known as parasites; there may have been some and we knew it not. But certain it is, when "pale disease and paper-skin" were brought to the consideration of sheep raisers, we were a long time finding out the cause. Grub in the head in sheep, like hollow horn in cattle, were alike looked upon as the results of starvation—a lack of "grub" in the belly, or hollow stomach. We were ignorant of the existence, and incredulous as to the possibilities of worms existing, to a damaging extent, in a vigorous animal. Nor do we know much about it now. We are surely beginning to learn, and are hopeful soon to be able to intercept these hordes and so keep them in check.

So peculiarly mysterious is their life history, so strange is their propagation, so ignorant are we as yet of the nature and metamorphosis from one form to another, that we do not know at what period of their existence we may destroy them with greatest certainty and readiness. We often, as stated, find these parasites getting in their work where they had not existed before. The first inquiry would be, Where did they come from? It now seems reasonable that these worms and embryos taken into the systems of hogs, dogs and birds, may be carried long distances and voided in favorable places, and in the proper form and time again enter into the sheep with grass or water, or its own peculiar manner of propagation.

Some years ago, we lost a few young rams. It was winter time, and our custom of burying all dead sheep was not adhered to. They were deposited out of the way of dogs, and went to decay. The next summer, in gathering up their bones to bury them out of sight of visitors and possible customers, and save some humiliating confessions, we found the first sheep gad-flies we had ever seen. They were in great numbers, and ready to propagate.



SAW-BUCK.

Burning was the remedy. This experience led me to conclude that fire was the only sure way of getting rid of the parasites in dead sheep and lambs. It was the cause of their death. They are full of parasites and the germs of parasites; if eaten by dogs, etc., they are not destroyed, but carried and scattered from farm to farm, or eaten by birds and still more widely scattered.

It will be said by some that all dead sheep cannot be cremated. We insist upon it, or the parasites will become a menace to sheep raising far more than

now. We do not duly estimate the damages of these pests in the United States. They are seriously on the increase, and in our ignorance of their natures will continue their ravages if not headed off at all turns of their existence.

Aside from these scattering germs and broods by dogs, there is another very urgent reason for destroying all dead sheep and lambs. No one can wonder that by eating these dead sheep a fondness for mutton is created by our own carelessness. From eating these carcasses, the dog,



CORN-SHELLER.

seemingly by natural instinct inclined to chase sheep, learns to kill them. If we tried to teach them to kill sheep, I know of no more effectual way than to leave all dead sheep and lambs within reach of dogs. It invites them to the premises by day and by night. It has been a wonder to me that sheepmen have not taken some share of the blame they give to dogs that kill sheep.

There is nothing stated here from theory, but I believe it is true from a long experience in handling sheep. The sheep raisers of this country have much to learn of management not hitherto laid down in the books. The changes and conditions are demanding more thought every year. It is not as it was in healthfulness. There is no place for carelessness and neglect in care of flocks. The lucky sheepmen are the ones who win by intelligence, industry and persistence; the unlucky ones are the careless, shiftless.

SUGAR CANE.

In no department of agriculture has greater progress been made than in the cultivation of sugar cane. Fifteen years ago, seventy-five to one hundred pounds of sugar from one ton of cane was considered a good yield. Now, by improved methods of manufacture, from 100 to 230 pounds are made from a ton of cane.

While the state of Louisiana has for years been regarded as the great sugar state of the Union, it by no means holds a monopoly of this industry. Texas is rapidly coming to the front as a sugar state, and much of Florida and Mississippi is adapted to the production of sugar cane, and smaller areas of Georgia, Alabama, Arkansas and South Carolina. In many portions of the South below the 35th degree of north latitude, from one to six acres of sugar cane are planted by the small farmers for making sirup alone. A plant of machinery for making sugar involves a large outlay of capital, small growers cannot invest in such machinery. From a few acres of good creek-bottom land, however, a farmer can make several hundred gallons of the most delicious sirup by the same sort of an outfit used for making sorghum sirup. This consists usually of a little, one-horse, vertical cane-mill and an inexpensive evaporator, made usually of wood, with a copper bottom. Such an outfit can be made for not exceeding

\$75, and the farmer can usually get all the help he needs for harvesting and grinding his cane and boiling his sirup by paying each hand about two gallons of sirup for each day's work.

Cane grinding on these small farms is a season of fun and frolic, usually,

for the children. To them, it is what the sugar making in the maple groves of the North is to the youngsters. From the evaporator the hot sirup is run off into tubs or long troughs to cool. About an inch of white, thick and very sweet scum forms upon the surface, and into this the boys and girls dip little wooden paddles and eat until their taste for sweet is satiated. It is very wholesome, and I never knew one to suffer any bad effects from eating it. Nor have I ever known any one to become sick from chewing good, ripe cane. Indeed, there seems to be nothing deleterious in

any of the products of sugar cane except rum.

It requires from six to seven gallons of cane juice to make one gallon of sirup, boiled down nearly, but not quite, to the point of granulation. A bit of litmus paper is dipped into the boiling cane juice, and if it turns red, there is too much acidity in it. A little slack lime is thrown into the evaporator to neutralize the acidity. When enough lime is added, the juice will turn the litmus paper blue.

Under the old process of sugar making on the large plantations, the juice was boiled down in large kettles until quite thick and "ropy," and then run off into cooling vats.

A large portion of the entire mass soon granulated and settled to the bottom. The molasses was then drawn off and reboiled to prevent fermentation, and then put into barrels for market.

Now the hot and thoroughly-cooked sirup is run into a big, circular vessel of wirework, somewhat resembling a basket, and by rapid rotary motion the molasses is thrown out. This is called the centrifugal process. It is far ahead of the old way in many respects; principally in separating the molasses and sugar much more thoroughly, thus leaving the sugar comparatively dry. One thousand pounds of good, yellow (unclarified) sugar, and from 100 to 150 gallons of molasses per acre, is considered a good paying yield on the large plantations.

Sugar cane is a very heavy crop to handle, and is at present cut by hand with broad, sharp knives about a foot and a half long, and the thickness of a hand-saw blade. An effort is now being made by the Louisiana Sugar Planters' Association to get some inventor to bring out a machine cutter that can be operated with two mules and that will cut ten acres per day as clean as if cut by hand. A premium of \$1,000 is offered for such a machine.

Marshall, Tex.

DICK NAYLOR.

HOW TO GROW SWEET POTATOES.

Procure the potatoes for seed; then dig a square hole, about two feet deep; curb this up with inch boards, and fill in fresh stable manure to the depth of fifteen inches. Cover the manure with finely pulverized soil, five or six inches deep; then cover the bed with boards and let stand until the manure heats, which can be told by running the finger down in the soil. Next, plant the potatoes so they will not touch each other (split the large ones in halves). Cover them half an inch deep, and keep the bed well covered until they begin to grow. Water them daily with slightly warmed water, until large enough to take care of themselves.

A sandy piece of land is best to grow the crop. I make ridges and prefer them to hills. The soil should be finely pulverized and the plants set ten inches apart. In hoeing, commence at the top of the ridge and scrape down the sides, and then draw the dirt back. This pulverizes the soil and keeps the weeds down. Keep well hoed until the vines cover the ground.

Indiana.

H. WILLIAMS.

A CORN-SHELLER.

I send you a plan for a good, home-made corn-sheller. Take two pieces of wood 2½ feet long, 1¼ inches thick and 3 inches wide. Shave each piece down to a sharp edge, finishing in the center of one edge of each piece. Place them 1½ inches apart, with the square edges together, and wrap them from one end to the other with telephone or smooth fencing wire, ¾ of an inch apart on the stick, crossing it between the sticks. Fasten the wire for starting by means of a small staple. When done, place it in a box, and with a little elbow grease it will shell surprisingly.

Kentucky.

JOHN W. HOBSON.

SAW-BUCK.

Mr. J. N. Purtleman sends a description of a saw-buck, which he says is much better than the ordinary kind. The illustration explains how it is constructed. The side pieces are 2½ by 3 inches, and 3 feet 9 inches long. They are placed 18 inches apart, and the cross rounds and legs are inserted in 1¼-inch anger holes.

Spring Wagon, \$30.25; Cart, \$10.00; Harness, \$1.80. Sample prices; manufacturers' bottom figures. Goods fully warranted. It will pay you to send for catalogue. Address The Miami Buggy Co., Cincinnati, Ohio.

Our Farm.

FARM AND GARDEN NOTES.

BY JOSEPH.

PREPARING SOIL FOR A FRAME.—A few weeks ago, in trying to fix up a frame for cabbage and cauliflower plants, I found the soil too wet for working, and perfectly alive with earth-worms, large and small (mostly the former), and various other creeping and crawling things which I could not consider of especial benefit in a plant bed. So I got a lot of sifted, dry coal ashes and a peck of air-slacked lime. These materials were scattered evenly over the bed, and then thoroughly mixed with the soil by spading, hoeing and raking. The next day not a live worm was to be found, while the soil was nice and dry—just right for sowing seeds. Lime or lime-water is the never-failing remedy for all soft-bodied worms, and transforms what is a nuisance when alive into an acceptable fertilizer.

ROOTS FOR STOCK.—The silo and silage boom has, in a measure, given a set-back to the cultivation of mangels and other roots for stock. Whatever the merits of the newer method of feeding green stuff worked up into "kront," this method is limited to farms where stock keeping, especially dairying, is carried on as a business. The owner of one or two cows or horses, etc., has little use for the silo system, and can get along very well with a patch of mangels, carrots or similar root crops. The great trouble is that the majority of farmers have not yet learned how easy it is to grow a great amount of most valuable, succulent, easily-kept, winter food for their stock, on quite a small piece of land, and how much good they can get out of it at slight expense and labor.

There is no kind of stock on the farm that would not be materially benefited by free rations of roots through the winter. Carrots are especially fine for horses, keeping them sleek and in health, with a great saving of grain; mangels are still more easily produced, and are just the thing for cattle and pigs, while turnips may be preferable for sheep, but good for pigs, also. Parsnips are also excellent for all stock, and may be left in the ground over winter for early spring feeding. For poultry, all the roots named come acceptable. I have made it a practice for many years to chop up a lot of carrots, beets, turnips, sometimes apples and potatoes, and mix a good portion of this, twice or three times a week, with their cooked mess in the morning. This serves as a substitute for the green food when the fowls cannot get this otherwise, and I find it has a most happy effect on the egg machinery.

The owner of stock, no matter if it consists only of a single cow or a dozen hens, if he has no silo, should not neglect to plant a little patch of roots. The novice might try mangels first, as they are easiest to raise. Select a piece of ground that is in a fair state of fertility and reasonably clean from weeds (recently-broken clover sod is good), and no larger than you are sure you can take care of properly—rather less than more; then manure it heavily with good compost, free from weed seeds, and plow and harrow thoroughly. If you have wood ashes or good fertilizer of any kind, apply this on top, and by means of a fine harrow or a steel rake, get the surface smooth and even. Then drill in seed, preferably of some yellow globe variety (although some of the large red sorts are also good and reliable) in rows three feet apart, and at the rate of about four or five pounds to the acre. If no drill is at hand, mark out the ground in rows three feet apart, with a common corn-marker, and drop a pinch of seed every foot apart in the drill, covering lightly, and setting the foot firmly up each "hill." A few radish seeds strewn in the drills will soon indicate where the rows are, and enable you to begin cultivation almost within a week after seed is sown.

Use a narrow-bladed cultivator, and use it freely, to keep weeds down and soil mellow. Weed and thin as needed, so you will have one good plant to every foot of

row. For a small patch in the garden, the rows may be made narrower—say, thirty inches apart, and the whole worked with a Planet Jr. hand wheel-hoe, or a similar hand weed-killer and cultivator.

I prefer to plant carrots still closer, having the rows only 15 or 18 inches apart, and working all by hand. The cultivation is about the same as that of beets or mangels; but as the seed starts slowly and feebly, it is always of importance to select clean soil and begin cultivation, weeding and thinning very promptly. A few radish seed, as in the case of mangels, always serve a good purpose as indicators of the rows. White Belgian will give the largest crop, and I usually grow the bulk of my crop of that variety. Among the red sorts I know of none superior to the Half Long Danvers, and the Chantenay. Near large cities with a steady market for red carrots for stock feeding, these are often a very remunerative farm crop, selling at \$1 to \$2 per barrel, 300 barrels per acre being a good crop.

WIRE-WORMS.—What to do to clear a field from wire-worms, with which it is overrun, is another of the problems propounded to me by a suffering correspondent. The insect in question is the hard, apparently legless, worm which is the larva of one of the common claters, or spring beetles, so called from the peculiar habit of suddenly throwing themselves several inches, or even feet, into the air, when placed upon their back. The grubs, or worms, live on all kinds of vegetation, roots, stalks, tubers, bulbs, etc., and in some fields, especially on sod ground, are often very numerous and destructive. Most, if not all, of the insectivorous birds seem to be especially fond of this worm, and eat them for breakfast, dinner and supper, and ever so often between meals if they can get them. For this reason I would recommend as the first and foremost remedy for the wire-worm, to protect these birds and build them houses, and to keep cats and squirrels and crows, etc., away from their breeding places. Turn the infested land over frequently with the plow, to disturb the worms and bring them to the view of their bird enemies. Poultry also like them for a change. The means often employed in Europe for the disposal of wire-worms; namely, baiting, trapping, gathering and destroying, are worthy of trial with us. Slices of potatoes or turnips are distributed in regular rows over the infested field, and examined regularly every morning by women or children, who gather all the worms found and destroy them. We might try a simpler method, provided, however, that there will be no likelihood of cattle, horses, sheep, hogs or poultry getting into the field and getting hold of the bait. It is more than probable that sprinkling these pieces of potato or turnip with Paris green, in dry mixture or solution, will rid the field as effectually of wire-worms (and of many potato bugs at the same time) as fresh sods, cabbage leaves, etc., sprinkled in the same way and scattered over a field will rid it of cut-worms. At least this is worth trying.

ONION GROWING.—With onions, as with potatoes, the grower for market will seldom miss it if he follows the rule to plant lightly when the respective crop brings high prices, and to plant heavily when the crop is a drug on the market and every grower is disgusted with it. This was again proven to be a good rule in the years 1888 and 1889. The crop in 1888 was enormous, and in the fall of that year, and spring following, prices were extremely low, thousands of barrels of onions being allowed to rot because there was nobody who could pay even 25 cents a barrel for them. Every grower became discouraged and cut down his usual area or quit the business entirely. The consequence was a small acreage and small crop in 1889, and prices as high as \$10 per barrel for white onions this spring. Now, most likely, people will go wild over onion growing again, and plant more than the market will take next fall or spring at a remunerative figure. I should think people would learn this after awhile, but they do not. This play up and down has been going on for as long as I can remember. It has made farmers rush wildly into the growing of hops, potatoes and

onions, and out of it, and it has brought them very little money. Hop culture has ruined more farmers than it has made rich, and onion growing has been a source of loss to more people than a source of wealth. This our friends should bear in mind. The onion grower has to deal with many uncertainties, the greatest of which is the price which he will realize for his crop. The novice has the chances of success against him from the start, and I would urge my friends to begin very cautiously, if at all, this season. Select only a small area of rich soil that is reasonably free from weeds; use plenty of the very best of manure, wood ashes, fertilizers, nitrate of soda, etc.; prepare the land thoroughly; sow good seed of best market varieties in drills 12 to 18 inches apart; cultivate with wheel-hoe every few days; weed promptly, and thus try to raise a maximum crop; then gather and sell in early fall, and perhaps it may pay you.

SOME EXPERIENCE WITH NOVELTIES.

My experiments were with Dwarf Champion tomato, Livingston's Mammoth Yellow Bush Scallop squash, Golden Wonder millet and Seradella. The squash and tomato were acquisitions, especially the tomato. Besides ranking high in other good qualities, it is greatly superior to the more common varieties for its upright growth and compactness of bush. The much-praised Golden Wonder proved a fairly good millet, but for our soil and climate not quite equal to German millet. It looked as if it might be a cross between the latter and Hungarian grass. Seradella was a complete disappointment. With garden soil and garden cultivation it grew from the first of May till the 8th of October without a blossom, and I had seen it highly recommended for bee pasture. It has a pretty leaf, and stock eat it readily, but it is too slender and delicate to yield much forage, or to hold its own against Crab grass if sown as a field crop. It bears a good deal of frost, and with the late, extraordinary winter, mine was not finally killed till March.

But these novelties are expensive, and a farmer whose list of vegetables is not very extensive can, for less money, try a few standard varieties that will be equally novel to him, and probably more profitable. Thus, last year I made my first trials of White Stuttgart radish and White Vienna Kohl-rabi. Both were a complete success, and either of them was a greater acquisition than any of the novelties except Dwarf Champion tomato.

Lincoln county, Tenn.

D. S.

Orchard and Small Fruits.

CONDUCTED BY SAMUEL B. GREEN.

STAKING RASPBERRIES.

I have been raising raspberries a good many years, and I think I have a plan that holds up weak plants, and all others, with the least possible work to accomplish it; and that is as follows: Drive a stake at each end of the rows firmly. Get whatever amount you may need of No. 12 galvanized wire (this never rusts), and stretch it just taut from stake to stake. As a matter of course, your berries must be trimmed before training them this way. Fasten the wire not higher than fifteen or eighteen inches from the ground on the stakes, and have it as high as wanted in the body of the row. Bend all the canes that lean on one side of the row down under the wire to the opposite side, where they will stay of their own accord. The canes that lean to the other side can be served the same way, and one man, when he gets up to the business a little, can put more vines to the wire than four men can tie to stakes, and then the vines are spread all along the row, which lets in light and air, besides being easily cultivated. When I first began to use wire, I thought it necessary to drive stakes about every thirty feet to hold up the wire, but that was work thrown away—a stake at each end being sufficient, and I have rows forty rods long. I have been cultivating the Souhegan or Tyler, as it is the earliest berry and produces well. Two years ago last summer, it averaged nearly \$10 per stand of two bushels. The last two seasons it has not sold so high.

JOHN J. MEARS.

INQUIRIES ANSWERED

BY SAMUEL B. GREEN.

Scale Louse on Oleanders.—D. E. A., Orange, N. Y. Apply several times, at intervals of a few days, the kerosene emulsion recommended in these columns lately for bark louse and aphids.

Cranberry Culture.—Mrs. A. K. Wilson, Dallas, Oregon. For directions for planting, care and cultivation, you had better study some good work on the subject. A good one is "Cape Cod Cranberries," published by Orange Judd & Co., of New York City. The plants may be obtained from any of the well-known nursery concerns.

Japanese Persimmon—Propagation of Plants Wanted.—C. C. B., Clayton, N. C. The Japanese persimmon grafts easily if worked near the ground on our native persimmon, but it does not bud on the same with equal certainty. The stalks should be cleft-grafted after growth has started in the spring.—The most complete work in this country is by Andrew S. Fuller, called "Propagation of Plants," published by Orange Judd & Co., New York City.

Strawberries on Poor Land.—A. A. M., Norfolk, Va., writes: "What mode would you adopt in caring for a crop of strawberries set this spring on poor soil. One reason for placing them on poor land is on account of weeds growing so luxuriantly on good land. The cost of keeping them clean in such land is no small item for a large patch. I have never tried it, but thought that by raising them on moderately poor land and fertilizing them with some preparation prepared especially for berries, I might make as successful a crop as that grown on better land, all things considered. Would like to know what kind of fertilizer to use, what price and when to apply it. Also, how much per acre."

REPLY:—Where weeds do not grow well, there must be an absence of plant food to supply the wants of other crops. There is no fertilizer that will make strawberries grow and yet not produce a great growth of weeds. I always like to see the weeds grow, for then I am sure of a good growth of berry plants. If you wish to use a commercial fertilizer, you could use any of the complete fertilizers for sale in the markets. A good, complete fertilizer is made by mixing together 300 pounds of finely-ground bone, 120 pounds of high grade (80 per cent) muriate of potash and 60 pounds nitrate of soda or sulphate of ammonia. These materials can be bought in all the large cities of dealers in fertilizers, and the amount given, which is sufficient for one acre, would cost about \$10. It should be applied by scattering it between the rows near the plants (not on them), and immediately mixing it with the soil.

Plant Lice.—M. L. B., East Cleveland, Ohio, writes: "We have a number of beautiful willow trees, which for the past three or four years have been infested with small, brown insects similar to mildew. Can you give us a remedy or preventive? We have whitewashed the trees, sprayed them with lime, Paris green and coal-oil, but were not successful in destroying them. They make their first appearance by the middle of August and stay till killed by the frost."

REPLY:—Your willows are infested with a species of plant lice. By using the kerosene emulsion you can destroy them. The foliage should be thoroughly sprayed, or else dipped into the emulsion. We again repeat the Hubbard formula for making kerosene emulsion, which, for all kinds of plant lice, as well as for scale insects, is the best insecticide:

Kerosene.....	2 gallons—67 per cent.
Common soap, or whale-oil soap.....	$\frac{1}{2}$ pound, } 33 per cent.
Soft water.....	1 gallon,

Heat the solution of soap and add it holling hot to the kerosene. Churn the mixture, by means of a force pump and spray nozzle, for five or ten minutes. The emulsion, if perfect, forms a cream, which thickens on cooling, and should adhere, without oiliness, to the surface of glass. Dilute before using, one part of emulsion with nine parts of water. The above formula gives three gallons of emulsion and makes, when diluted, thirty gallons of wash.

ON ADVERTISING.

There seems to be an unwarrantable objection in some minds, mostly medical minds, to paid advertising upon certain kinds of paper. All matters of this kind are decided by reference to the "Code of Ethics." This, as we shall see, though, in many respects, strict, is sometimes quite elastic in others. For example, they are permitted to advertise upon tin and other metals, bricks, stone, wood and cardboard. They are allowed to put out and pay for their signs, and scatter their professional cards with liberal hand. They may write books, which are sold at a high price, giving a full account of their wonderful cures, always by way of illustration, and interesting details as to patients' age, height, complexion, temperature, temperament, respiration and domestic affairs. But this is not considered "advertising." Their contributions to medical journals, describing, with appalling accuracy of detail, the cases they have cured, are copied gratis by the newspapers, but all this is within the code.

We have often given our views on this subject and defined our position. As the public do not seem to share this prejudice to any alarming extent, we simply point to what has been accomplished by our Compound Oxygen Treatment in chronic cases, and those given over by physicians, and add, that over 1,000 physicians are using it in their practice, and taking it themselves. But you will find it all, evidence, records and descriptions of cases, proof irresistible and convincing, in our book, sent free. Address Drs. STARKEY & PALEN, 1529 Arch street, Philadelphia, Pa., or 120 Sutter street, San Francisco, Cal.

EXTRACTS
FROM CORRESPONDENCE.

FROM MICHIGAN.—Chippewa county is situated along the South St. Marie river. Detour is a small town where the river empties into Lake Huron; all transportation between Lake Superior and the lower lakes passes here. We have a first-class farming country. Our principal crops are wheat, oats, hay, potatoes and turnips. The land is clay loam, heavily timbered with maple and beech.

Detour, Mich.

G. W. C.

FROM ILLINOIS.—Union county, Illinois, is one of the best places in the Union. We have almost everything at our command. Fruit is our staple product; corn, wheat, oats, etc., are raised in plenty for home use and some for market; tomatoes are being grown by almost every farmer in this vicinity, from 2,000 to 10,000 plants to the farm; sweet potatoes are being grown this year, from two to ten acres to the farm. The average yield is 100 bushels of salable potatoes per acre. We have at this time fine prospects for strawberries and apples; peaches are almost all killed. We have good springs of pure water. Most all good land is in cultivation. There are few if any farms for sale. We have good schools and churches.

Mountain Glen, Ill.

S. E. L.

FROM KANSAS.—Your correspondent from Point View, Kansas, is evidently laboring under a misapprehension in regard to Kansas and her resources and production, for he makes statements which will not bear investigation. I have farmed in this state ten years and have known no failure of wheat and corn in this section; in fact, we raise such large crops of all cereals and vegetables that it has a tendency to lower prices and so eat down the farmers' profits thereon. The gentleman is certainly mistaken when he says we cannot raise timothy hay, clover and fruit here. I know from practical experience that timothy and clover both grow luxuriantly, and we have abundant crops of fruit nine out of every ten years. Taxes in our county are very light, and money can be had for 6 and 7 per cent. What is meant by "lack of law for the masses"? I do not know, but we have as good laws as any well-regulated state has or needs; indeed, some other states might profitably imitate us in some respects. Kansas has faults. What country has not? But do not let us magnify them; let us rather represent her as she is, a great and prosperous state.

Lawrence, Kansas.

J. R. F.

FROM MICHIGAN.—This part of Michigan is known as the Grand Traverse region. I live on land which is despoiled by a great many farmers, who consider it unfit for agriculture and prefer to take hard-wood land and clear it rather than to take this for nothing. I can take one acre of this plain land, and by applying the same amount of money that it costs to clear one acre of hard-wood land, produce equally as much and even more. I can buy land here for almost a song; hard-wood land is bringing \$10 per acre. There are thousands of acres here which produce the best kind of pasture. From April to December stock find their own living. There are good churches here for any one who desires to live in northern Michigan. I reside about ten miles from East Bay, which gives good shipping facilities to all parts of the United States. This is considered as healthy as any part of the lower peninsula. The air is dry, as it is several hundred feet above Lake Michigan. There is some government land to be had yet, and most of the land has timber enough on for home demand. Speculators buy the land to get the timber and then leave the land to be sold for taxes. I would like to see men come in here with some energy and some knowledge of agriculture, and convert these plains into beautiful farms, which can be done with little capital and work.

Five Lake, Mich.

F. A. S.

FROM MISSOURI.—Wright county is situated in the south-western part of the state. It has a population of 10,000. The county is well watered by clear, blue springs, cold, swift-running brooks and the Gasconade river. The river bottoms are broad and fertile. The streams abound in fine fish. We have fine timber, as oak, hickory, ash, locust, cedar, walnut and maple. Wright county is the most healthful county in the state. For farming and stock raising this county cannot be excelled. The soil is rich, and suitable for all kinds of vegetables. Our principal products are corn, wheat, oats, hay and potatoes. We raise all kinds of fruits. Corn yields from 45 to 80 bushels per acre; wheat, 10 to 30; oats, 40 to 60, and hay from 2 to 4 tons. The bottom land is the best for all kinds of crops; the upland is fairly good. The price of land ranges from \$10 to \$50 per acre, owing to location and improvements. There is much attention given to the raising of sheep in this county. There was a deficiency of rainfall in the summer of 1889, but this is not common in this state, especially in south-west Missouri. Our climate is mild in winter and pleasant in summer. There are no sudden changes and but little wind. We have good schools and society. Our churches are Baptist, Presbyterian, Methodist

and Campbellite. There are some wild lands and improved farms for sale.

Duncan, Mo.

S. M. M.

FROM SOUTH DAKOTA.—I write from the great Missouri bottoms, forty-five miles west of Sioux City, where the bottoms are about fifteen miles wide and of immense fertility, producing heavy crops of grass, corn, wheat, oats and barley. A large amount of hay is baled here and shipped to Montana and the East. Corn is the great staple crop of this country, though wheat yields more than in the famous Red river country. Many of our corn fields of one hundred acres or more yield from sixty to seventy-five bushels to the acre. Most of this is fed to cattle and hogs. One party near here fed three hundred head of steers this winter, with corn at 20 cents per bushel. One great advantage we enjoy on these bottoms is the abundant supply of good water from artesian wells, at an expense of about \$100 or a little less. These can be located at convenience dictates and piped to any part of the farm, affording a good supply for the largest farm. The commencement of the settlement of this part of Dakota was about thirty years ago, and stock was such as could be picked up in the near eastern settlements, with very little regard to quality. But for several years there has been a growing interest in the improvement of our stock. The common scrub horse is being improved by the infusion of the best blood of French and English importations, and many of our farmers have supplanted the scrub breeds of cattle by the noble Short-horn. We have made the not very remarkable discovery that there is less money in a native steer at 3½ cents than in a Short-horn at 5 cents. Our interest in swine is hardly second to any other. It is common to find a farmer with 100 and sometimes with 200 head of hogs. There is no stock that a farmer handles that is so quickly, easily and cheaply improved as our swine. The farmer that is breeding twenty-five sows, and may expect one hundred and fifty pigs, by using a thoroughbred male improves his herd at least twenty-five per cent, which would, the first season, more than pay the cost of improvement. Though we have many fairly good hogs, the recent introduction of the Improved Chester White is attracting considerable interest, and it may become the leading hog of this part of the country.

Meckling, S. D.

L. H.

FROM CALIFORNIA.—San Luis Obispo county is developing quite rapidly; only three or four years ago it was comparatively a new country. On the Carls plains in the south-eastern part of the county there is yet considerable vacant land, but it is rapidly being settled up. The Southern Pacific railroad was built through a portion of the county three years ago. Its present terminus is at Santa Margarita, about eighteen miles from the Pacific ocean; it will be necessary to tunnel the Santa Lusa range of mountains to reach the city of San Luis Obispo or the ocean. The road is expected to be extended to completion with the line which is built up the coast from Los Angeles into and north of Santa Barbara City, Santa Barbara county. San Luis Obispo county has an area of about 2,500,000 acres. There is considerable mountain land in the county, as there are two ranges of mountains that extend entirely through the county parallel with the coast—the Santa Lusa range, near the coast, and the Mt. Diablo range further east, about fifty miles from the coast. On the east side of the Santa Lusa mountains fruits and vegetables do finely. At Aroyo Grande onions have been raised that weighed six pounds two ounces, pumpkins or squashes that weigh from 25 to 27½ pounds, and other vegetables in proportion. In that part of the county wheat does not do very well, as it is too foggy, but on the east side of the mountains the wheat is of the very best quality. Some kinds of fruit do well on the east side, such as grapes, peaches, pears, plums and prunes, but it is most too warm in summer for apples, which, however, do well near the coast. Nature yields a bountiful return to the husbandman in this county. But yet there is a stringency in money and much consequent distress; the energies of the county being depressed, large portions of the farming communities are heavily burdened, and are struggling for relief with money at from 12½ to 18 per cent interest per annum, and scarcely to be had at that. We have organized a Farmers' Alliance in the neighborhood, and expect to have a large membership soon. The farmers of this nation must become thoroughly organized and move as one man for their interests; this is the only way anything can be accomplished.

Paso Robles, Cal.

A. N. R.

FROM KANSAS.—Your correspondent L. W., of Point View, Kansas, surely has but a very limited knowledge of Kansas when he says his county is as good as any, and at the same time that fruit raising is not a success, neither is raising timothy or clover. Thirty to forty counties of the state have been shipping apples to Colorado and the mountain regions for more than twenty years. In more than one half of the state, timothy and clover are as certain crops as the sun is to shine. Thousands of Ohio people can testify from their own knowledge that they never saw such crops of

either in Ohio as they have seen in Kansas. In 1872 I had the honor of exhibiting our fruits, grains, grasses and vegetables at the Ohio state fair, at Springfield, and John A. Warder, the veteran pomologist, Mr. Bateman, Messrs. Riehlmond, Frey and the then secretary, Mr. Kilppart, all bore evidence to the superior quality of the exhibit, gathered from twenty-seven counties of the then young state. But this is but repeating an "old told tale." What I started to say was that taking advantage of our homestead law, men have taken land, with no other capital than their brawn and muscle, borrowed money—often at a high rate of interest—to make improvements; and because the land don't pay itself out in two, three, or five years, they deride the country. Would these parties expect to go to merchandizing, to manufacturing boots and shoes, etc., wholly upon borrowed capital and expect the business to pay itself out, support a family, etc., especially when they had a very imperfect knowledge of the occupation? That is precisely what hundreds of men do expect of farming in Kansas and elsewhere, and because they do not understand their business or because of an unprofitable crop now and then, which must happen and be provided against, the interest falls due and unpaid, the mortgage is "foreclosed" and another is added to the rank of the grumblers. I know of at least twenty men here in my own neighborhood who have bought land on credit; have improved their farms, built good houses and barns, improved their stock and raised families, in fifteen to twenty years; and the farms, supplemented by good judgment, economy and industry, have paid it all and left the owners worth from \$5,000 to \$15,000. What other business could do more?

Leavenworth county, Kansas.

A. G. C.

FROM WISCONSIN.—The prairies are large and are entirely occupied by an intelligent and prosperous class of farmers. The timber lands, the hillsides and ravines are mostly settled by emigrants from Norway. Good farms, well improved, sell for about \$40 per acre. The main crops are grass and hay, corn and oats. We sell no grain, but feed it all to stock. Occasionally we buy corn for feeding. Corn which now sells in Nebraska and western Iowa for 15 cents per bushel, we buy for 28 cents; the railroads pocket the trifling difference. Forty bushels of corn per acre we call a fair yield on good soil, though some farmers raise 50 to 60 bushels per acre. Oats, on good soil, yield 40 to 50 bushels. Two tons of hay per acre (clover or timothy) is a large yield. A few of the hardiest varieties of apples do well here, and the trees live to a good age. Properly handled and cared for, apples are a profitable crop. Berries of all kinds are abundant. Walnuts, hickory nuts and hazelnuts can be had for the picking. Cheese factories are springing up all over this part of the state, the patrons claiming that selling milk at 70 cents per hundred pounds pays better than making butter. Of these factories, some make the Cheddar, some the Swiss and some the fragrant Limburger. La Fayette county is justly noted for its fine draft horses. A five-year-old, weighing from 1,400 to 1,600 pounds, of which kind we have many, will now sell for \$150 to \$175. We have quite a variety to select from, the Norman, the Clydesdale and the English Shire. Besides these heavy horses we have some very fine roadsters. Dehorning cattle is practiced in this section, and those who have tried it like it. This county has its drawbacks. The winters are usually long and cold, the temperature subject to sudden changes, the extremes of heat and cold very great. The mercury has been known to rise to 102° in the shade, though it rarely rises above 90°. It has frequently

been known, during a cold snap, to sink to 40° below zero; and how much further it would have gone, had it been able to retain its liquid state, we can only conjecture. Yet with all its drawbacks, Wisconsin is one of the most healthful states in the Union, and those who have known her longest love her best. Corn is now worth 28 cents, oats, 18 cents, potatoes, 25 cents per bushel; hay, \$8 per ton; butter, 15 cents per pound; eggs, 12½ cents a dozen; hogs, \$3.70 per hundred weight; fat cows and heifers, \$2.50 to \$3 per hundred weight; steers a little more.

Fayette, Wis.

L. B. H.

A SALARY

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Our Fireside.

LOVERS WILL GO VISITIN'.

HERE, Kate, you've dropped the dish-cloth now! Oh, what a naughty girl! Bringing me company to-day, And things in such a whirl—I'll have to put the churnin' off And stir a cake for tea, I never knew that sign to fail—I wonder who 'twill be!"

"Perhaps, Aunt Jane, the Farringtons," Spoke Kate, "or else the Greys." "Such folks don't go a visitin', child, These busy summer days. Who ever heard, this time of year, Of taking teams right out Of hayin', and of harvestin', To gallivant about!"

Then Aunt Jane went to beating eggs; While Kate, with eyes of brown, Looked down the road. Could it be Jack,) Coming that day from town? The old, brass knocker, later on, Resounded through the hall, And Aunt Jane said, "I told you so, That dish-cloth's brought a call."

I'll just peek through the parlor blinds— Walt Kate—it's—let me see— That city chap; I'm glad enough, It's nobody for me. Well, that's the way; all lovers will Go visitin' when they please, But I do wish they'd stay at home, In hurrying times like these!"

—Good Housekeeping.

Mr. Bracebridge's Dilemma



LOVE is like lightning. Not in its rapidity of action, although the simile is often carried out to that extent, but in the way in which it is stored in the human generator; made up bit by bit from nervous energy, good health, or, it may be, some morbid condition, and then, when the full charge has accumulated,

it expends itself generally on the most prominent object in the surrounding expanse of country. I have seen lightning strike a clump of Spanish bayonet two feet high on an Arizona mesa. There was nothing else in sight. If a man had "gone off" like that it would have been a case of "infatuation."

When Mr. Bracebridge took the advice of his physician to "seek some quiet resort," and appeared at Blue Lick Springs, he was suffering from a recoil, as it were. Six months before he had met Miss Retta Costello, the daughter of Peter Costello, the great "copper king," at a dance in the Ponce de Leon hotel, and had straightway fallen head over ears in love with her. She was a pretty little thing, who, if she had contracted the fever for theatricals that is epidemic in fashionable circles just now, would have been cast by an astute manager for a "singing chambermaid." And, on the other hand, if the great Peter, her sire, had remained on the old sod as Lord Lufton's tenant, little Retta would have played the role in reality with great success. As it was, her sprightliness, her French education and clothes set her on a pinnacle where she received the homage of all the adjacent youth. Up to the time of the Ponce de Leon dance she had shown herself such an excellent conductor that all the shafts lunched at her had gone through her head and heart without leaving the slightest trace and landed at her feet. But it was a strong-headed woman who could pass over the adoration of Richard Bracebridge without even a thrill. Miss Costello had a great many. There were rides and walks and dances and drives, and then Mr. Bracebridge took his best gold pen into his nervous fingers and wrote a business letter to the great Peter, asking him for his only daughter now, and the prospect of eight or ten million dollars in the course of nature, and very properly felt himself a presuming upstart while he was about it.

The copper magnate agreed with him. He wrote Mr. Bracebridge a pompous letter telling him that the last descendant of one of the Irish kings was not to lightly mate with an American of no particular wealth or position, and he must decline the honor of the alliance. When this letter reached Mr. Bracebridge he had already received the tearful adieu of his beloved, she having been summoned home by a peremptory telegram from the same source.

Mr. Costello showed his allegiance to Great Britain in one striking (to Americans) peculiarity. He ruled his daughter.

And so, when Mr. Bracebridge appeared at Blue Lick, he still drooped the corners of his mustache, under the impression that for him

"The flowers and fruit of love were done. The worm, the canker and the grief Remained for him alone."

But nature abhors a vacuum. After he had expended his accumulation of youthful passion upon Miss Costello, and received nothing in return, kind nature began storing up a new charge. It was early in the season at Blue Lick, and, beyond four or five young married ladies with their babies and nurses from Cin-

clunati, and two or three thin "yongg" ladies who had discovered, from an experience of thirty years (or over), how pleasantly inconspicuous one can be with a paper novel or a bit of fancy work, the place was deserted. So Bracebridge smoked his cigars and loaned his French novels to the young married ladies, and played with the babies, wearing his gay blazers and varied neckwear for the bedazzlement of the maids, until his self-respect was fully restored.

By the time the brilliantly-tinted Kentucky girls had begun to make gay the piazzas with their white dresses, there was interest in the up-curve of his mustache and in his eager eye-beam. There had been no one to fritter it away upon, and the charge was almost ready to blaze forth.

It was at this time that some of the young people in and around Millersburg, Bourbon county, made up a riding-party to visit the Springs, and Kitty Basil came along. Perhaps it was her entire dissimilarity to Miss Costello that attracted Mr. Bracebridge's notice; but I think (and so did he) that the Kentucky girl attracts purely upon her own personal merits. Tall and willowy and dark, as she dashed up to the hotel steps on her black thoroughbred and Bracebridge took her in, it seemed to him that she and her horse had been made for each other. It was a pity to spoil the exquisite symmetry of the picture by separating them. But when she sprang lightly down, and, lifting one edge of her short riding-skirt just enough to give a tantalizing glimpse of polished riding-boots about six inches long, walked across the piazza with the free yet high-headed movement which was her state heritage, he could only hope that he might see her dance, to be intoxicated by the perfection of motion.

When Mrs. Lacy, the young married lady who had "adopted" him, sprang toward her with the endearments of intimate friendship, he felt like kissing the Lacy baby on the spot.

But he was spared that, as Mrs. Lacy motioned him with her eyes to come forward and meet her friend. It was very simple.

"Mr. Bracebridge, Miss Basil—" but poor Bracebridge felt as though the gates of paradise had been flung open in his face. The wide lawn, carpeted with matted blue grass and shaded with forest trees, became instantly an enchanted scene, now that he was to walk there with this young goddess.

Did you ever, in the vernacular of that state, "court" a Kentucky girl? If you have, I can't tell you anything. If you have not, there isn't any use in my trying, as it would not be within the power of man to tell you everything.

She can fence and coquet until you are on the brink of despair, and wild with anger, and determined to let the jade alone, and then, with one flutter of her eyelash, or one curl of killing sweetness in the corner of her mouth, she can bring you to your original state of adoring helplessness.

Bracebridge and Kitty Basil went through the whole programme. I could give it verbatim, but honor prevents me giving Miss Basil's actual sentences, and I am by no means clever enough to make up new ones on the same lines. She went back home that evening with the inspiration of conquest dancing in her eyes, and he went up on the hill behind the hotel and smoked cigars over the invitation she had given him to come over to Millersburg and play tennis on their lawn.

Miss Basil's home was known as "The Nunnery," from the fact that it had originally been owned by a family named Nunn. It more than compensated for its sombre name. There were five daughters younger than Kitty, and people said each one gave evidence and promise of greater beauty than the one that went before. Her next younger sister, Marlon, seventeen, was spending the summer at West Point with an aunt, and turning the heads of half the cadets. With true Kentucky lack of mercenary considerations, she married a West Point graduate the next summer, and went to New Mexico to enjoy love in a desert.

Next to her came the twins, Nelly and Sally, just turning thirteen, and the veriest Tom-boys that ever existed. If Bracebridge had not been in love—genuinely a victim to the *grande passion*—the rudeness and pranks of those girls would have driven him out of the state. As it was, they took on some of the halo that he had fitted to their sister.

He sent up to Lexington and bought a riding-horse from a dealer there, and then, like a knight of old, felt ready to do battle for his lady fair, only in this case the battle must be won by a ready tongue as well as a flashing armor.

The Bourbon county pike winds through the green fields like a silver ribbon, hard and white, but here and there are shady dirt roads where two horses can loiter along close together.

Many and long were the talks and discussions that Bracebridge and Miss Basil held, ever disagreeing, yet each conscious that every day drew them closer together.

One night (it was truly night when they started, for the August day had been too hot to think of anything but coolness and seclusion as long as the sun shone) there was a riding-party. In the arrangement at starting, Bracebridge had fallen to a Miss Biddle, a

pasty-faced girl whose whole talk was of the Cynthiana and Lexington races, and who made desperate bids for Bracebridge to bet her confectionery and gloves upon the coming contests. If he could have given her a ton of candles and a gross of gloves, and never heard of her again, he would have gladly done so; but betting with her now meant some sort of intercourse in the future, and he steered clear of the possibility. The moon was low in the sky as they rode home. As they turned out of the pike into an open lane that was a "short cut," Bracebridge's heart, when he found himself at last by Kitty's side, broke into a flame.

He leaned over and covered her whip hand with his own. There was an answering pressure from the little, gloved fingers.

"Will your father be at home to-morrow?" he said, his voice stiff from emotion.

"Papa?" she said. (He knew she was humming.) "Don't you mean me?"

"No. I must see your father before I see you again."

There was a flash from eye to eye, and then Bracebridge rode on and heard the legend of the run Goldsmith's Maid made against Jay Eye See from the enthusiastic Miss Biddle, but even that horsey young woman could not damp his new joy.

When he went into the Millersburg hotel that night he ran across Jack Blair, who had just come in from Blue Lick. They smoked a cigar apiece while Jack went over the salient points in the Springs' gossip for twenty-four hours, and then Bracebridge went to his room. He had just divested himself of collar and shoes when the door opened and a large, white envelope was thrown in.

"They told me to give you that. It came this morning. Came within an ace of forgetting it."

"Thanks, Blair," and he picked it up.

A business letter, of course. He hadn't read ten lines until he felt as though he should go mad. It was from Peter Costello.

FIFTH AVENUE HOTEL, N. Y.

MR. RICHARD BRACEBRIDGE, SIR: Finding that your attentions to my daughter have seriously injured her health—"What does the old fool mean?" poor Bracebridge ejaculated—and the physicians saying that she must have her way and not be crossed, I write to you to retract my refusal to you of last January. The doctors say she will die unless her mental troubles are relieved. Come at once.

Yours respectfully, PETER COSTELLO.

"The old ass!"

Alas, Bracebridge! Had this letter come to you two months ago, instead of sitting there with your head in your hands, disgusted at its style of composition, you would have pressed it to your heart as a harbinger of great joy. "Times change, my masters." All night long he walked the floor. Perhaps ten hundred times he drew a sigh from his boot-heels, and breathed out:

"Poor girl! Poor Retta!"

It is a terrible thing to have a girl dying for you. Of course he loved her—loved her like a sister; but how could he leave Kitty? Kitty, glorious Kitty, whose father he was to see that very day. He knew there would be no difficulty there. He had already made friends with jolly, happy-go-lucky Major Basil. What would they think of him? It had got to that now. Bracebridge was too much of a man to shirk his responsibilities. If Retta Costello had loved him enough for the parting to mean death to her, then he could only despise himself that he had not returned it in kind. She should never suffer from his fickleness.

And then there was his explanation to Kitty! He felt as though his hair was growing white with misery.

It was daylight when he finally finished the five sheets of paper in which he tried to do himself justice. He directed it to "Miss Kitty Basil—The Nunnery," and then packed his few belongings that he had brought over to Millersburg, sent a telegram to Blue Lick for his trunk to be sent to the New York Hotel, thanking his stars meanwhile that only yesterday he had paid his bills to the end of the month, and went out in time to catch the one train to Paris, the adjacent town. As he went out of the Pernel House office he dropped a dollar and his note to Miss Basil in the waiting hand of the one bell-boy.

"Take this to Miss Basil this morning."

"Yes, sir." And he was gone.

As the train rolled across the bridge there was a mist in Bracebridge's eyes. He never expected to see the shabby little town again.

He would have been wild could he have known the fate of his letter of explanation.

It was late afternoon before "Yellow Bob" found time to carry the note out to the Nunnery. As he came in sight of the house from a turn in the lane that led up to it through a natural park of forest trees, he saw Miss Nelly and Miss Sally Basil come mingling down the veranda steps with long dresses, plainly the property of their sister, dragging after them. As they saw the colored boy they gave a couple of shrill screams and started back, and then, recognizing him, advanced more haughtily than before.

"What do you want?" Miss Sally inquired, with freezing dignity.

"Laws, Miss Sally, I don't want nothin'. Jes' fetched a cyard to Miss Kitty," and he brought out Bracebridge's letter.

"Very well. Give it to me." And slipping

it into the pocket of the dress she was holding up, she walked on as though letters were as plentiful as leaves, and of no more consequence, leaving Yellow Bob a picture of admiring awe.

An hour later the dresses were hanging in Kitty's wardrobe, and the letter's message was still unread.

One would naturally imagine that this interval had been one of some anxiety to Miss Basil; and perhaps it would have been except for one incident. When she returned from her ride the evening before, she found that her father had been hastily summoned to New York upon important business. After she had received a morning caller in the figure of Jack Blair, and learned that Mr. Bracebridge had also gone to New York, she went about one prison of radiating smiles.

The most romantic girl could not ask more in a lover than was hers. He had told her that he could not see her again until he had seen her father. Her father had gone to New York, and this rash youth had followed him.

Meanwhile, Bracebridge was going over the dreary journey. As the miles flew by, perhaps his greatest suffering was in his realizing sense of the instability of his own feelings. As he thought of Kitty's cleverness and beauty, and the love-light in her eyes, he was sure that she was the core of his soul. And then, when he thought of poor little Retta dying for love of him, he longed to reach her and clasping her in his arms, assure her that her griefs were over. He at last arrived at the conclusion that this last was the proper state of mind. As he had fully determined to marry Retta, she was the shrike at which he must burn his incense.

It was ten o'clock of the hot August night when he reached the city. He took a hansom to the New York Hotel, and wondered why they kept an invalid in whom he felt a proprietary interest in any such stifling atmosphere. And then he went to bed and to persuade himself that it was all a dream.

The next morning, after a late breakfast, he wended his way down Fifth Avenue to the hotel.

He asked for Mr. Costello, was informed that he was not in, and then he asked if his card could be carried to Miss Costello. In the course of fifteen minutes her maid came down and said that Miss Costello would be glad to see Mr. Bracebridge if he cared to see an invalid. His heart tender within him, he followed the precise Frenchwoman upstairs.

He was ushered into a very dream of a boudoir, evidently fitted out in its details by the present occupants.

Miss Costello was lying on a wicker lounge piled with silk cushions that delicately harmonized with the texture of her *deshabille*. She greeted Bracebridge with gentle languor, and presently told her maid that she might go.

As soon as the attendant was safely latched outside, Bracebridge fell upon his knees and put his arm across the shoulder that invited his clasp. How happy they would be! He could feel in anticipation the unswerving pressure of her arm.

What was his utter surprise to feel her draw back from him, and to hear an icy voice say, in the ear attuned for the accents of passion:

"Mr. Bracebridge, what is the meaning of this extraordinary conduct? Will you be good enough to sent yourself in that chair?"

"Retta, my darling, has not your father told you?"

"Papa? Told me what?"

"That, in consideration of your health, he has at last consented to our engagement."

"Did he tell you that?" The invalid was sitting up.

"Here is his letter," and taking it from his pocket (he had expected to produce it under vastly different circumstances) he gave it to her.

She glanced rapidly over it, and then fell back among her cushions with almost hysterical laughter.

By this time Bracebridge was standing stiffly over her.

"Sit down. Oh, sit down," she managed to say, finally. "And did poor pop think it was you?"

And then she sat up again, and reaching out took Bracebridge's passive hands.

"Poor Dick! Confess you had forgotten all about me when you got papa's letter. Now, hadn't you?"

Bracebridge's face took on a fine scarlet.

"I knew it! I knew it!" she cried. "And I—I had given you up long ago. It is some one totally different."

And then, still holding Bracebridge's hands, she told him the story. The object of her love just now was the manager of her father's business in New York. A New Englander of no social qualifications whatever, but with a "way" that had ensnared the heart of his employer's daughter. Miss Retta had skillfully played upon the feelings of her physicians, and had a deep-laid plot to make her father ask her the cause of her despondency, when she meant to tell him the truth. Thinking himself infallible, the old man had succeeded in offering his daughter to the man she didn't want, and who didn't want her.

"Go away. Leave me the letter. I can settle him now," this daughter of her sire said, with determination; and Bracebridge gladly took her advice.

ALARMED!

Yes, actually scared to death are all the Buggy and Harness men throughout the country. They are howling themselves hoarse for us to stop and give them a show. The immense sale of our "Murray" Buggies and Harness is for them, but we still keep on selling our WORLD RENOWNED "MURRAY" \$55.95 BUGGIES and \$5.95 HARNESS direct to consumers; in fact we have gained such a high reputation on our "Murray" Goods, that the people must have them, and no others, so we have to keep on making them regardless of the squealing of our would-be competitors. We will, however, say here that we feel sorry for them. In fact

They have our DEEPEST SYMPATHY WHILE We have the LARGEST BUSINESS on EARTH

and will have to again enlarge our capacity and to accommodate our marvelous growth of trade. **HAVE YOU A "MURRAY" BUCCY or HARNESS?** If not, you are one of the few who are behind the times, and the rear of the "Procession of Advancement." If you have not the money to spare to buy a "Murray" Buggy or Harness, the next best thing to do is to write to us for our large illustrated catalogue of these marvelous turnouts, and drown your sorrow by digesting the healthy contents and making the vow, "That the next Buggy or Harness I purchase, Providence willing, will be a 'Murray,' which is the peer of all others, and don't you forget it."

WATCH OUR IMITATORS!

We have knocked them all out on our straight forward way of doing business, and now many of these disgruntled would-be competitors are trying to copy us; they even go so far as to copy to a great extent our catalogues, etc., thinking that they can dupe the unsuspecting public into their snare by representing to do business like us, (but are selling goods that are dear at any price). We are letting them alone for awhile, just to see how long it will take them to work their own ruin.



WATCH OUR IMITATORS.—(Continued.)

But lest some of our friends might be enticed into their web, we make these remarks, and while "a word to the wise is sufficient," we will say, study our catalogue well, and if you should have any others look at them, and if you see the similarity, you will know what's up. Many of these same imitators are making claims to sell cheaper than "Murray," but are making a flat failure of it; for everybody knows we make and sell more of our celebrated "Murray" Buggies and Harness than all of them combined; consequently undersell them so far that it makes their heads swim and their business sink.

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As he boarded the ferry for Jersey City that afternoon, he was delighted to see the portly form of Major Basil just ahead of him, and he went up and touched him on the arm.

"Hello! Mr. Bracebridge. You here, sir? Glad to see you. Where are you going?"

Bracebridge gave a little, embarrassed laugh and a casual glance around to see that they were out of ear-shot.

"That depends upon you, Major Basil."

"Upon me?" and the rich voice was jovial. "Then you'll come back to Kentucky. I can't ask better company."

"But you will have to take me as a son-in-law."

It was out. Major Basil grasped his arm.

"You don't mean to tell me you've run off with my daughter?"

"No. Oh, no."

Bracebridge, never realizing that if he had done so it would have been regarded as a capital joke by Major Basil, was inexpressibly shocked.

"I only hope to marry her with your consent."

"Well, you have it," the major said, cordially, shaking him by the hand. "I saw it was coming to this some time ago, and I took pains to inquire about you, young man, and I have no fault to find. Kitty's a good girl, and deserves a good husband, and I believe you'll make one."

As the journey progressed, Bracebridge learned that his prospective father-in-law had left Millersburg the evening of the ride. And like a flash he saw his loop-hole—if only he had never written that letter!

As they drew nearer and nearer their destination, Bracebridge had alternate fits of exaltation and despondency.

Suppose Kitty refused to take a man who a week ago was on his way to marry another woman, and who had only returned to her when informed that he was not wanted? Half a dozen times he opened his lips to confess it all to Major Basil and ask his advice, and then put off the evil hour.

The major expected him to go at once to the Nunnery, but dread at his possible reception made him invent an excuse for going to the Blue Lick Hotel for a day. The last words he heard were:

"I'll tell Kitty you'll be over to-morrow."

All night long Bracebridge tossed and tumbled the sheets of his bed; and as he slowly rode up the avenue at the Nunnery, the next morning, his state of mind was not much calmer. His heart gave a bound of delight as he saw Kitty just disappearing down a leafy arbor of the old-fashioned sort, that led to a wisteria-clad summer-house. It would have given an extra leap had he known that this was the first time his letter had been near her. In the pocket of her dress it had lain undisturbed since the afternoon of the promenade a la peacock.

He gave his horse into the hands of a grinning colored boy, and followed the path through the arbor, snapping his riding-cane against his boot.

Although Kitty must have heard the sound, she did not look up until Bracebridge stood before her. She had received the congratulations of her father, and, it may be, looked for a different advance. Her air of surprise was pretty, but there was no doubt of the cordiality of her glance, and in another second she was in Bracebridge's arms.

After they had gone over and over their particular variation of the original life's

melody (convinced that they alone knew the fundamental theme), Bracebridge finally plucked up courage to ask her what she thought when she received his letter.

"Your letter?"

"Blessed soul," he thought, "Is that a woman's way out of a dilemma? Pretending she did not get it? Or did she?"

Just then she put her hand into her pocket—and drew out, to her infinite amazement, the letter.

"Did you put it here just now? What is it?" and looking for a surprise—delightful, of course—she took a long pin from her dress, and began to cut open the end.

Bracebridge was almost stupefied with amazement. He felt like a counter on a board being moved about by Fate, and then, regaining his faculties with a rush, he took the letter tenderly out of her hand.

"I wrote it," he said, "fearing that I might not see you. It is useless now. I put it there in jest."

And in his heart he excused himself the deceit.—A. S. Duane, in Frank Leslie's.

THINGS BEST LEFT UNDONE.

Do not write on ruled paper, or on that decorated with printed sunflowers or blossoms of any kind.

Do not introduce your girl friend to the gentleman visitor. Instead, say, "Miss Brown, will you allow me to present Mr. Jones?"

Do not talk especially to one person when you have three or four visitors. Instead, make the conversation general.

Do not attempt to take care of a man's overcoat; he has a voice and ought to be able to look after his own clothes.

Do not ask people who they are in mourning for. If you don't know, wait until you find out, and in the meantime, don't ask after the members of their family.

Do not giggle when a smile would answer, and don't talk in a jesting way about things that are holy to other people.

Do not laugh at anybody's form of worship; respect a toad praying to a mushroom.

Do not say the rules of etiquette are nonsense; they are made up for your comfort and mine, and arranged so that the feelings of every human being is considered.

Do not get into the habit of laughing at elderly people. It is not only unladylike, but it is vulgar.

Do not think it clever to find out, by pumping, the private affairs of your friend. There is no reason why you should lay bare her heart for an inquisitive daw to peek at.

Do not get into debt, but if you have been guilty, deny yourself everything possible that you may be free once more.

Do not believe that all these don't's are not spoken to you in the kindest manner, as from girl to girl, but one has to suffer and make mistakes oneself to find out into just what pitfalls one is apt to tumble.—Ladies' Journal.



BROWN'S FRENCH DRESSING

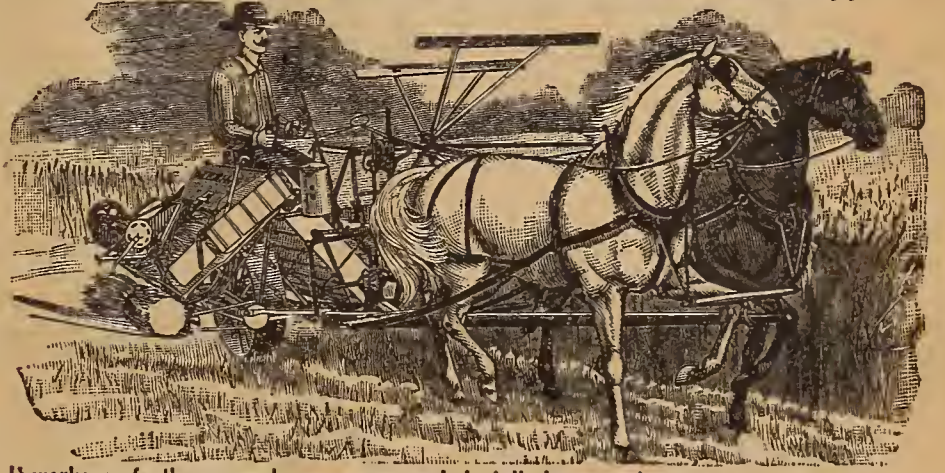
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Our Household.

MOTHER AND CHILDREN.

HE sits in the gathering twilight,
A woman bowed with age,
And reading of all life's record,
Only its brightest page;
Sits and dreams of the children
Who left her long ago,
And listens for little footsteps
Which longing mothers know.

In fancy they're here beside her,
As she had them long ago—
Susie and Ben and Mary,
Ruthie and little Joe:
And her heart throbs high with rapture
As each fond kiss is given,
And the night is filled with music,
Sweet as her dreams of heaven.

Such wonderful things as they tell her—
A nest in the apple tree,
And the robin gave them a scolding
For climbing up to see;
And a wee, white lamb in the pasture,
Down at the foot of the hill,
And such a great, ripe strawberry
That Sue found by the mill!

She listens to all their prattle,
Her heart a-brim with rest;
She is queen in Love's own kingdom,
Each child is a royal guest;
Queen? 'Tis an empty title.
More than a queen is she—
Mother of young immortals
Who gather at her knee.

She brings their welcome supper,
And they sit down at her feet,
Tired and hungry and happy,
And she laughs to see them eat;
Then she smooths out their locks' wild tangles
With a loving, tender hand,
While she tells some wonderful story
Of the children's fairyland.

Then the knots of rebellious shoe-strings
Are patiently untied,
And the children in their night-gowns
Kneel down at mother's side;
And in voices low and sleepy,
Their little prayers are said,
And the good-night kiss is given
As she tucks them into bed.

Then a quiet comes about her,
Solemn, and still, and deep,
And she says to herself in the twilight,
"My darlings are fast asleep."
Yes, fast asleep, fond mother.
In their beds so low and green,
With the daisies and clover blossoms
Each face and the sky between.

—Eben E. Rexford.

ROMAN EMBROIDERY.

WE gave, a short time ago, a paper on this article, which has interested so many of our readers, that in this issue we give a few cuts showing a pattern and the method of treating it. In the borders will be seen the manner of doing the work.

To make the picot, place a coarse needle in between the stitches at various points to hold the thread loose. The barred threads are first carried over from one point to another, then worked in button-hole stitch the same as the edge. The large pattern is one quarter of a design for a pin-cushion top.

Where the two lines follow around the pattern, reverse the work, making the edge of the button-hole stitch come towards the edge at the edge, and the next row turn towards the middle of the pattern. To make the wheel, darn around



BORDER OF ROMAN EMBROIDERY.

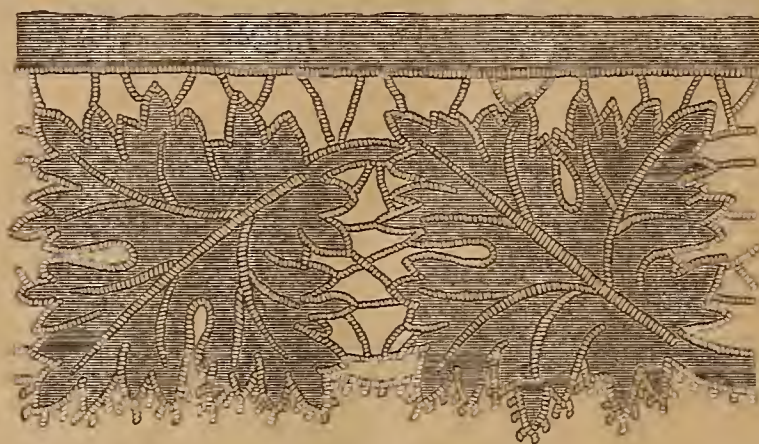
the threads, just as you do other darning. The material used should be shirt-bosom linen, or a very excellent quality of bishop lawn, or India linen; heavy, white, silk floss. It is not pretty done in colors. Whatever color you wish may appear in the silk lining laid beneath to show through the cut-away parts. A very sharp pair of small scissors may be used to cut away the material after it is finished.

Either of the borders shown may be used in addition to the center pattern.

CHRISTIE IRVING.

HOME TOPICS.

CHOCOLATE CREAM CAKE.—The following is a new recipe for chocolate cake; at least, it is new to me, and we think it superior to any other. For the cake, take one cup of powdered sugar, one quarter of a cup of butter, two eggs, one half of a cup of sweet milk, one and one half cups of flour into which two teaspoonfuls of baking-powder have been sifted, and one teaspoonful of vanilla. Cream the butter and sugar, add the beaten yolks of the eggs, the milk and vanilla, and then the flour; lastly, add the whites of the eggs beaten to a stiff froth. Bake in two jelly-cake pans. For the cream, take two cups of powdered sugar, two thirds of a cup of sweet milk, set it on the stove and let it boil fifteen minutes, or until it ropes when taken up with a spoon. Take it off the fire and beat until it is cool and thick enough to spread; flavor it with vanilla. Melt two squares of chocolate over steam and stir in two tablespoonfuls of water and powdered sugar enough to thicken. Spread the chocolate on the top of one cake and the bottom of the other, then put a layer of the cream over the top of the choc-



BORDER OF ROMAN EMBROIDERY.

olate on one, and put them together so the cream will come between the chocolate. Spread a layer of chocolate over the top and over that put the cream. This cake is very nice with ice cream.

BEAUTIFY THE HOME.—Many people of limited means say: "It is all very well to talk about beautiful homes; if I had plenty of money I would make my home pretty, too." Then, because they have not much money to spend, they make no attempts to beautify their homes, but live on from year to year with the same cheerless, unattractive rooms and dreary surroundings, and children are born and grow up without the softening, refining influence of beauty. There is no doubt that the surroundings of people have much to do with their mental and moral life, and the young are especially susceptible to this influence.

It is not the amount of money spent, but the care and taste exercised that will transform any home, however humble, into a lovely, inviting place. Nowhere is beauty so cheaply and easily secured as in the country; in fact, there is no excuse for its absence. If the house must of necessity be small and cheaply built, yet make it as pretty in style as possible; and if a piazza cannot be afforded, let the front door be covered by a rustic porch, plant a good supply of vines and nature will drape it in luxurious style. In many places, Virginia creeper, bitter-sweet and trumpet vine can be had for the trouble of transplanting from the woods. If you are building a house, do not put it too near the road, but leave room for a good, generous lawn, with trees enough for shade and some flowering shrubs. Many of these, too, may be borrowed from the neighboring woods, and a day or two cannot be better spent than in planting trees. Be sure that there are plenty of fruit trees near the house. If you cannot afford to set a large orchard at once, set a tree or two at a time, and you will have the orchard before you know it.

Inside the house, it is the little things that give it the cosy, comfortable, "homey" look. No costly carpets, drapery or furniture are needed. A floor can be stained for fifty cents, and bright rugs made from remnants of carpet which can

be bought for very little. Windows may be draped with cheese-cloth, and a little ingenuity with some of the many descriptions of home-made furniture which are found in many papers will help to make a pretty, little home with no more expense than often goes to furnishing where no attempt is made to beautify.

An ivy or a madeira vine trained over a window, inside the house or over a picture or mirror, adds much to the beauty of a room, and costs very little in time or money. A single pretty picture placed where the eyes may fall upon it will rest one as they work. A pleasant room makes all the household happier and consequently better, for happiness is an important factor in promoting goodness. It is for this reason that everything which goes to make home beautiful is of moment, and we cannot afford to neglect the least of these.

MAIDA McL.

PAINTED POTTERY.

Many ladies admire decorated ware, but when they find that china painting requires a peculiar kind of paint, and firing in a kiln, they consider the process too complicated.

Earthenware, properly painted, has all the effect of china. Select a jar of simple form. If you wish it to stand on the top of a book-case or on a shelf over a door, a

large size is best. If designed for a mantel ornament, one nine inches in height is large enough.

It is desirable that the paint should have a perfect glaze. This is produced by the best japanner's size or a solution of gum dammar and benzine. Which ever is used must be freely mixed with the paint.

Tube paints are more expensive than one wishes to use; white being mixed with all the other colors, is used in the greatest quantity. You can get a small can of white paint, mixed ready for use, which will not cost more than fifteen cents. After using some of it, fill the can with water and the paint will not dry. A tube of ivory black, Antwerp blue, chrome yellow and burnt sienna can be bought for eight cents each, and being standard colors, will be found useful in so many ways about the house that the expense is inconsiderable.

A blue vase is always pleasing. It will look best mottled, having the darkest shades at the bottom of the vase. Antwerp blue is a very strong color; just a wee bit of it mixed with white will make the tint for the top. A touch of ivory black will improve the color, subduing it to a gray. The brush used should be flat, of bristles, and at least half an inch wide. A larger brush will not be amiss. In shading, go from light to dark. You can easily see that this plan is most convenient.

There has long been a craze for painting flowers on vases, but as they are intended to hold real flowers, the idea is not good. Imagine a blue vase, such as I have described, holding, in early spring, a huge bunch of dogwood blossoms; or later, a large cluster of pink peonies! The very thought is exquisite.

Burnt sienna mixed with white makes a warm, reddish tint. You understand, of course, that to darken the shade you use less white. Your own taste is the only guide in blending or mottling the shades. If you dip your brush very freely in the japan, the paint will run, and often of itself will produce beautiful effects.

A green vase can be made by mixing Antwerp blue, chrome yellow and white with the usual very little bit of black to subdue the crudeness. The shades in this combination admit of great variety. Tender, yellowish greens are pleasing; do not let the blue assert itself, or if so, let it be of a gray shade.

Try one of these vases and see if you do not like it better than those covered with floral decorations. The japan will so glaze the vase that it can be washed without injury.

KATE KAUFFMAN.

SAUCES FOR MEATS, FOWLS AND FISH.

Few country cooks understand the value of the art of making suitable sauces for meats and fish. It is one of the secrets of French cooking, and gives such variety and daintiness to the most ordinary meal, it is well worth every housekeeper's while to learn this branch of cooking. In this as in many other departments, the country housewife, who can have a garden as well as the opportunity to gather many wild bulbs, has the advantage of the city housekeepers.

It is not really necessary to know how to make sauces, but equally so to know what kind to serve with different dishes, boiled meats requiring quite a different sauce from baked meats, and fish and fowls being best served with such as are suited to them.

BREAD SAUCE.—One cup of stale bread crumbs, one onion, two ounces of butter, with a little salt, pepper and mace. Cut the onion fine and boil in sweet milk till soft, then strain the milk on the bread crumbs and let stand one hour. Put in a sauce-pan with the onions, pepper, salt and butter; boil. Serve with goose or duck and any kind of game.

BROWN SAUCE.—Melt a tablespoonful of butter in a frying-pan over the fire until brown, add a tablespoonful of flour, and stir until smooth, add half a pint of boiling water, and stir until it boils, add one chopped onion, a small, sliced carrot, with a blade of mace and a little parsley. Simmer gently for ten minutes, and strain, add a tablespoonful each of walnut, tomato catsup, Worcestershire sauce, salt and pepper and it is ready for use. Serve with beefsteak and warmed-over meats.

ALLEMANDE SAUCE.—Melt a tablespoonful of butter, but do not brown; add a tablespoonful of flour, mix well, add half a pint of soup stock or boiling water, and stir until it boils, add six chopped mushrooms, fresh or dried. Take from the fire, stir in the beaten yolks of three eggs, a little salt, pepper, onion juice and nutmeg. This sauce is for fish, either baked or boiled.

BECHAMEL SAUCE.—Melt an ounce of butter, stir in a tablespoonful of flour, add a teacup each of soup stock and cream, stir until it boils, take from the fire, season with salt and pepper, and add the beaten yolk of one egg. This sauce is very nice with sweetbreads, chicken cutlets and fish.

BERNAISE SAUCE.—Beat the yolks of four eggs until creamy, add half a teacup of hot water and four tablespoonfuls of olive oil; stand the bowl in which it is mixed in a pan of boiling water and stir until thick. Take from the fire and add a tablespoonful of vinegar, a little salt and pepper; mix well, and set aside to cool. Serve with boiled meats or fish.

CREAM SAUCE.—Melt two tablespoonfuls of butter, add the same of flour, mix smooth, add half a pint of rich milk (cream is better), and stir until it boils, season with salt and pepper, and serve as soon as made. Serve with sweetbreads, chicken, mutton and veal chops.

SAUCE HOLLANDAISE.—Mix two tablespoonfuls of butter and one of flour together until a smooth paste, place in a bowl over a kettle of boiling water, add half a pint of boiling water, stir until the sauce thickens, add half a tablespoonful of salt. Take from the fire, and gradually add the yolks of two eggs, well beaten, the juice of half a lemon, a teaspoonful of onion juice and a tablespoonful of chopped parsley. Served with baked or boiled fish, fish croquettes and other similar dishes.

MAITRE D'HOTE SAUCE.—Mix two tablespoonfuls of butter, a tablespoonful of chopped parsley, a tablespoonful of lemon juice and a pinch of salt together in a bowl until perfectly smooth. Serve with salt fish.

MINT SAUCE.—Chop a large bunch of mint very fine; mix with a tablespoonful of sugar, add a little salt and pepper, and rub well, add gradually half a teacup of vinegar. Serve with roast lamb.

ASPOGNOLE SAUCE.—Boil a quart of chicken soup until reduced one half. Put four ounces of butter in a frying-pan, and stir until very brown; add two tablespoonfuls of flour, mix well, add the soup, stir until it boils; then add one tablespoonful of Worcestershire sauce, one

tablespoonful of walnut and mushroom catsup each, season with salt and pepper, take from the fire and stir in a tablespoonful of currant jelly and a teaspoonful of lemon juice. Serve with meats and game.

ONION SAUCE.—Peel one dozen small onions and put them in a sauce-pan, cover with boiling water, add a teaspoonful of salt, and boil half an hour, drain and strain through a fine sieve. Make white sauce, add the onions, let boil up once. Serve with boiled fowls.

WHITE SAUCE.—Melt a tablespoonful of butter, mix in a tablespoonful of flour, stir and add half a pint of veal or chicken stock; stir until it boils, season with salt and pepper. This is the foundation for many other sauces.

SAUCE TARTARE.—Chop two or three olives, one cucumber pickle and a tablespoonful of capers all very fine, mix with half a pint of mayonnaise dressing, and serve with smelts, lobsters or any cold meat and fish dishes.

SUPRIME SAUCE.—Melt an ounce of butter, add a tablespoonful of flour, a tablespoonful of chopped parsley, half a pint of chicken stock and stir until smooth, let come to a boil, and thin with a tablespoonful of cream. Take from the fire, add the well-beaten yolks of two eggs, with salt and pepper. To be served with broiled or fried chicken.

SAUCE PIQUANTE.—Melt a tablespoonful of butter, and stir until brown, add a tablespoonful of flour, mix well; add half a pint of stock, and stir until boils; add a tablespoonful of onion juice with pepper and salt, set over hot water to keep warm. Put half a teacup of vinegar, one tablespoonful of chopped capers, one tablespoonful of powdered tarragon leaves in a small sauce-pan, and let simmer for fifteen minutes, add to the other mixture, and stir until it boils; strain, and serve with fish or fowl.

EGG SAUCE.—Make white sauce, add two hard-boiled eggs, the whites chopped fine and the yolks mashed. Serve with boiled poultry.

CELERY SAUCE.—Chop two bunches of celery, stew in water until tender, add one tablespoonful of vinegar, a little salt and pepper, with a teacup of cream, let simmer two minutes. Serve with boiled fowls and game.

MUSHROOM SAUCE.—Roll a teacup of butter in flour, put in two tablespoonfuls of water, and let simmer. Pour one teacup of cream in, with a pint of fresh mushrooms, season with salt and pepper. Let boil up once. Serve with boiled meats and fish.

GAME SAUCE.—Take a little veal sauce, squeeze in the juice of one lemon and two or three oranges, to which add a glass of blackberry wine and a tablespoonful of currant jelly. Let come to a boil. Serve with wild goose, duck or other wild meat.

ROMAN SAUCE.—Put a teacup of boiling water on the fire with a teacup of new milk, let scald, stir in a tablespoonful of flour mixed in cold milk, and three beaten eggs. Season with salt, pepper, two ounces of butter and two tablespoonfuls of vinegar. Boil four eggs hard, slice and lay in the sauce-dish, and pour the sauce over. Serve with fish, boiled tongue or venison.

CAPER SAUCE.—Mix two tablespoonfuls of butter, one of flour, and pour a cup of boiling water over it when thick, add two tablespoonfuls of chopped capers and one finely minced, hard-boiled egg.

OYSTER SAUCE.—Scald a pint of oysters, add one tablespoonful of peppersauce, same of vinegar and a little pepper. Pour in a teacup of new milk, boil five minutes and thicken with a tablespoonful of flour rubbed in butter. Serve with boiled turkey or chicken. ELIZA R. PARKER.

YOU CAN BREAK UP A BAD COLD by the timely use of Dr. Jayne's Expectorant, an old and popular medicine for Sore Lungs and Throats, and the best of all Cough remedies.

NEW MARTINSVILLE, W. VA., Jan. 20, 1890.
The Peerless Atlas and the picture, "Christ Before Pilate," came to hand a few days ago, and I am highly pleased with them. The atlas is much nicer than I looked for; I would not take five dollars for it if I could not get another copy. I thank you for them both.
G. S. LEININGER.

See our liberal offer on page 283.

HINTS FROM MRS. CYRUS.

Although neither a farmer's wife or daughter, there is to me a great deal of interest in a farmers' institute. There is only one thing in the same line that I enjoy more, and that is, a visit with some of my friends in their country homes.

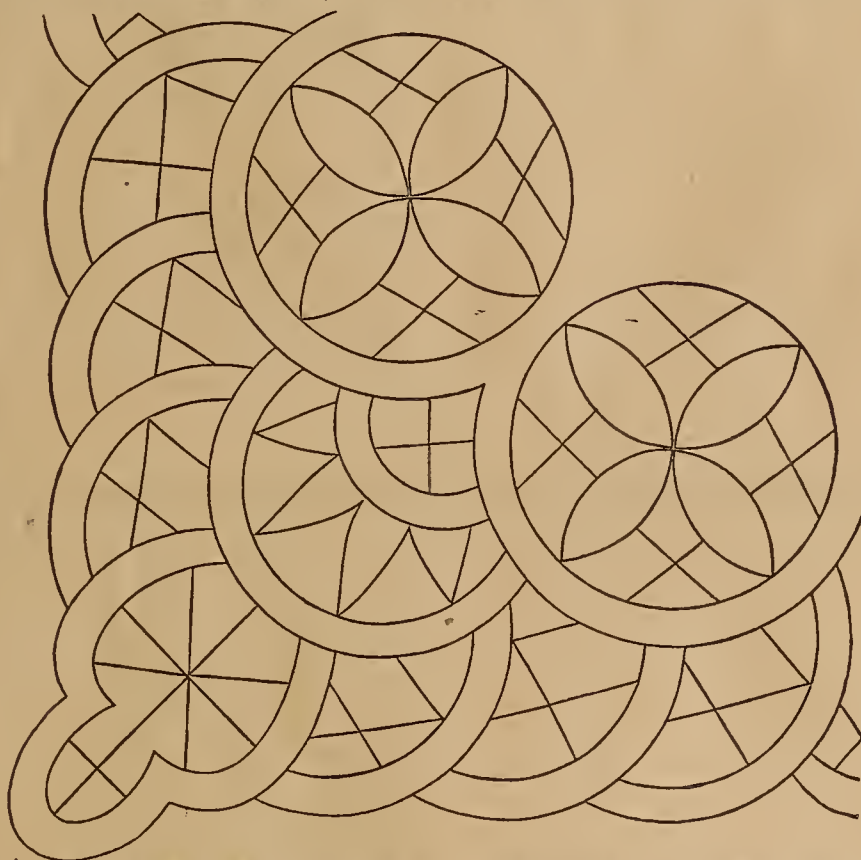
Mrs. Cyrus and I became acquainted when she came to me to take lessons in wood-carving. Yes, that's the kind of woman she is! Her butter is faultless, her bread perfect, her house well-kept, and withal, she finds time to look about the world, improve her talents, and keep up with the times generally.

Several weeks ago she invited me to visit her and help her design carving for her new home. The fame of her house had reached me, but I thought, when I saw it, that the half had not been told.

Nearly forty rooms, with every convenience of gas, electric bells, bath-rooms, heating apparatus, water conveniences, conservatory, incubator, and picturesque views from every window.

It was a busy and interesting visit. Very recently, I had a chance to take the twelve-mile jaunt in a buggy, and trusting to her unfailing cordiality, I dropped in again to see Mrs. Cyrus.

She made me happy with a whole-souled welcome, and entertained me in the best possible way; that is, she went about her work as usual, letting me follow her and chat, standing or sitting, accord-



ROMAN EMBROIDERY—ONE QUARTER OF A DESIGN FOR A PIN-CUSHION TOP.

ing to the conveniences of the place we happened to be.

"Do you know, I nearly ate myself to death that other time I was over here," I said, watching her set the supper-table.

"We haven't any hickory-nut cake this time," she answered, referring to a delicacy over which I had expressed great enthusiasm.

"But just as much canned fruit," I exclaimed in a tone of lively anticipation, and scanning the table I counted to myself strawberry jam (I remembered how good that was), pickled pears, preserved cherries, peach batter, canned pears, and something that looked very attractive, but unfortunately, I noticed it too late to taste it; they said it was husk-tomato preserves.

Mrs. Cyrus said, "Oh, yes, we always have our fruit for emergencies, and I like to work with it; it's little trouble, too, if one does things at the right time and in the right way."

"Well," I said, in honest compliment, "your fruit is the best I ever tasted."

"I attribute that to putting PAPER IN THE CANS"—She said, accepting the praise in a way which showed she was conscious she deserved it.

"Paper in the cans?" I echoed. "Do you mean when you put them away empty?" This made her laugh heartily.

"No," she said, "though I am very careful to have them put away perfectly dry and clean, and every bit of wax scraped off. I am talking of tin cans. I mean that I line them with paper before I put in the fruit."

"Tell me about it," I asked with real eagerness, for at the first suggestion it struck me as a good thing.

"Well, I get a pretty good quality of manila paper (buy it by the quantity), and cut strips just the height of the can. By lapping one around the can you can see how long they need to be; then set the can on the paper and draw a pencil line around the bottom. Cut out the circles; by doubling the paper a great many times it can all be done very quickly. Before putting in the paper dip the can in hot water and leave it wet; this causes the paper to cling to it. Put in the side paper first and then the bottom. You know, because the bottom was cut out as large as the outside of the can it is a little larger than the inside, and when you put it in that little surplus edge fits so as to cover the place where the tin is joined, and where cans first get rusty."

"Oh, isn't it a fine plan!" I exclaimed, feeling the admiration which always comes when I contemplate a work of art, be it a pie or a picture.

"And do you put a round piece of paper on top of the fruit?" I asked.

"Yes, and sometimes I dip that in whiskey or alcohol."

"Do you put all kinds of fruit in the tin cans?"

"Nearly all; my peaches, pears, strawberries, tomatoes and all kinds of but-
ters."

HOME-MADE RUGS.

I want to tell the ladies of the FARM AND FIRESIDE a good way to make nice rugs. Take scraps of worsted and flannel, old or new, cut in strips an inch wide; cut bias when you can. String them on strong, double thread by gathering them in the center of the strip; when gathered up on the needle, turn or twist it on the needle, so as to make a round roll, then draw them on the thread. Do not draw them together as tight as you can but let them remain a little loose. Make them in two or three-yard lengths, as they will be handier to weave. Dark rags interspersed with bits of brighter ones make the prettiest rug. When you make a carpet, tell the weaver when he gets within three fourths of a yard of the end, to cut out about three fourths of the chain. Then weave your rug; always run one shoot of strong rags between every rug rag, which will all hide under the rug rags; the chain will also all hide, if the weaver is a little careful in picking up the rags while weaving. You can afford to pay the weaver a little extra for weaving the rugs, as they are more tedious, if they take pains and weave them nicely. For a rug one yard and six inches wide and three fourths of a yard long, it will take nearly five pounds of rags when strung. The rug rags can be sewed on heavy canvas in a circle, which makes a pretty rug, but not as durable as when woven.

Paper matches can be made by cutting old postal cards into strips; place them in a cone handy. When wanted to light a lamp, they are a great saving.

Missouri.

MRS. A. WITMORE.

QUERIES ANSWERED.

MILDEW.—Mrs. C. R. Drake, Peach Grove, Ky. To remove mildew, soak one day in buttermilk. This will remove it if not too long standing. Lemon juice and salt applied and exposed to a hot sun, keeping the goods well sprinkled, is an old-time recipe.

LILACS.—Sarah E., Mt. Idaho. They may not bloom for several years, unless the conditions are exceptionally good.

BLACK AND SILVER PAPER.—It can be purchased at any large book or art store in our cities. Consult advertisements.

WHITEWASH.—Wichita, Kan. The wall must first be gone over with a thin sizing made with glue. It can be papered as soon as dry.

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Our subscribers will oblige us very much, and save us time and trouble in keeping accounts, if they will be so kind and thoughtful as to renew at least two weeks before their time is out, and thus avoid missing a number. We cannot keep back numbers, because our subscription price is so low that we cannot afford to hunt up back numbers.

The only way to avoid missing a number is to renew two weeks before your subscription expires.

About this time in our chat I followed Mrs. Cyrus into the cellar and saw an immense quantity of meat on a low bench.

"Ah, been butchering?" I asked.

"Yes, that's beef, and let me give you a recipe

TO CURE BEEF.—Allow it to lose all the life heat, and then soak it twenty-four hours in water wherein there has been dissolved a handful of saltpetre. This takes out the blood. Then the meat should be packed in a large barrel or hogs-head and enough brine made to cover it, about thirty-five gallons. The brine should be strong enough to bear up an egg, boiled two hours and skimmed thoroughly, after which it needs added five pounds of sugar and a quarter of a pound of saltpetre. The meat should lie in the brine three weeks, then hang and smoke it as you would pork.

"Oh, it's so good," said Mrs. Cyrus, smacking her lips. "Fried in slices it's better than the most delicious ham, or you can boil a large piece. Some parts can be smoked longer for dried beef. You see, it's economical, and convenient—"

"Oh, no doubt," I said politely, though the truth is, I didn't care so much about the meat, "but that idea of lining fruit-cans is what strikes me."

KATE KAUFFMAN.

CONSUMPTION SURELY CURED.

TO THE EDITOR:—Please inform your readers that I have a positive remedy for Consumption. By its timely use thousands of hopeless cases have been permanently cured. I shall be glad to send two bottles of my remedy FREE to any of your readers who have consumption if they will send me their Express and P. O. Address.
Respy T. A. SLOCUM, M. C., 181 Pearl St., N. Y.

Our Sunday Afternoon.

"PAPA, BE TRUE TO ME."

State Senator Henry J. Coggeshall, when in the company of a very hilarious conference committee, which was riotously advancing the public business in the rooms of one of the most high-living lawmakers in the state of New York, was asked why he would not take anything but Apollinaris water. His poetic muse replied in the following verses:

What makes me refuse a social glass? Well,
I'll tell you the reason why—
Because a bonnie, blue-eyed lass is ever stand-
ing by;

And I hear her voice above the noise of the
fest and merry glee,
As with baby grace she kisses my face, and
says, "Papa, be true to me."

What then can I do to my lass to be true better
than to let it pass by?

I know you'll not think my refusal to drink a
breach of your courtesy.

For I hear her repeat in accents sweet, and her
dear little form I see,

As with loving embrace she kisses my face,
and says, "Papa, be true to me."

Let me offer a toast to the one I love most,
whose dear little will I obey,
Whose influence sweet is guiding my feet over
life's lonesome way;

May the sun ever shine on this lassie of mine,
from sorrow may she be free,

For with baby grace she hath kissed my face,
and said, "Papa, be true to me."

WHO IS THE BEST MAN?

ALL useful work is honorable. The best life is that in which the powers of mind and body are most beneficently employed; an indolent life, whether passed in poverty or wealth, is a degraded and degrading life. No man can serve God by any other means than by serving his fellow-men. We do not disparage the church or the worship of God, in public or private places, but he is the

truest and most devout worshiper who goes about the practical duties of life in the right spirit, feeling that he is responsible for the use he makes of his time, talents, strength and opportunities. The man who, according to his ability, does the most to promote the welfare of his fellow-men, be he scavenger or statesman, hod-carrier or preacher of the gospel, is the best man on earth. The dignity of labor is not dependent on the sphere of one's activities so much as on the spirit of the worker and the nearness of his approach to his highest possibilities of usefulness. A good cobbler is a more dignified and honorable worker than the man who, having no capacity for intellectual pursuits, scorns to toil for a livelihood, and wastes his life in the substratum of a profession.—*Inventive Age.*

LADY OR WOMAN?

It is a curious fact, says a newspaper correspondent, that the use of the word "lady" is almost a shibboleth. There is a certain use of the word that shows you that the woman who uses it is not a lady. A real lady says woman much oftener than she says lady, and only uses the latter word on compulsion. Your wash-woman, on the other hand, tells you that she can't come that week, but she will send another lady to do the work. "A lady would like to go out by the day to scrub," is a common advertisement in the daily papers. If she was a lady she would say woman, but, being a "scrub-woman," she calls herself a "scrub-lady." It is curious, but the very fact of her calling herself a lady proves that she is not one. Laboring men are not so tenacious as to their claim to be called gentlemen. I have yet to see the advertisement of a gentleman to dig the garden or black boots. It is always a "man." But if these very men have occasion to speak of scrub-women, they call them ladies.

For Coughs, Sore Throat, Asthma, Catarrh, and diseases of the Bronchial Tubes, no better remedy can be found than "BROWN'S BRONCHIAL TROCHES." Sold everywhere, 25 cents.

COMMON-SENSE HOLINESS.

In his comments on "God is Love," Dr. Whedon says, "When our hearts are right, all is right." If by this is meant that when the heart is right all is right within, that there are no internal discordances, the remark is correct. When the heart is right, everything relating to our inner life is right. But, if by the remark is meant that, the heart being all right, all about us is right, or appears right, as the doctor's further comments indicate, then the remark is very far from being correct.

Some have the impression that if the heart is pure and holy, it says Amen to everything. It sees no wrong, though it may exist; and, if by chance it should discover wrong, it speaks of it so sweetly that the wrong doer regards himself more complimented than condemned. That is a holiness too sentimental for a world like this, and too effeminate to make its way to victory, when the war is with "principalities and spiritual wickedness in high places." It takes genuine holiness to see evil and sternly rebuke it; to discover wrong drifting, and call a halt, and exhort to reformation.

There is a namby-pamby, soft, sentimental, do-nothing kind of holiness, which sits down and sweetly sings itself away to everlasting bliss, and waits for God to do the rest, which does not belong to this world, and the sooner the world is rid of it the better. We need a holiness which "dares to do right," as well as to get happy over being right; which seeks to "turn the world upside down," if, in so doing, some people, to their great discomfort, find themselves wrong side up; which dares to call things by their right names in the very face of those who are "lovers of pleasure more than lovers of God."

WAY TO KNOWLEDGE.

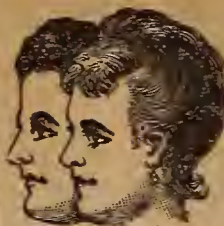
In our search for the "hidden wisdom," let us study the case of Elijah at Horeb. When the great wind rent the mountain and broke the rocks in pieces before Elijah, he could not see God in the wind, nor in the earthquake. These were only the effects of the divine presence in nature. But, after the fire, there came a "still, small voice;" and, when the prophet heard that, he wrapped his face in his mantle and went to the mouth of the cave, and, in "a speechless awe that dares not move," stood before the Lord to receive in silence the inner word. It is only in this "sound of gentle stillness" that the Most High utters his voice in the soundless and ineffable Word, the inward Logos, the true light that lighteth every man that cometh into the world.

A true faith stands before Jehovah—who is represented on earth by Jesus—in the deep silence of an adoring love, and holds out its empty hand to receive the life and light. He is more than willing to give. From within outward, and from the higher region of our mental nature to the lower, expresses the law and order of spiritual development.

PARENTAL GLOOM.

Boys and girls are often spoiled by parental gloom. The father never unbends. The mother's rheumatism hurts so she does not see how little Maggie can ever laugh. Childish curiosity is denounced as impertinence. The parlor is a parliament, and everything in everlasting order. Balls and tops in that house are a nuisance, and the pap that the boy is expected to relish is geometry, a little sweetened with the chalk of blackboards. For cheerful reading, the father would recommend "Young's Night Thoughts" and Hervey's "Meditations Among the Tombs." At the first chance, the boy will break loose. With one grand leap, he will clear the catechism. He will burst away into all riotous living. He will be so glad to get out of Egypt that he will jump into the Red sea. The hardest colts to catch are those that have a long while been locked up. Restraints are necessary, but there must be some outlet. Too high a dam will overflow all the meadows.—*Talmage.*

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A FEW FACTS ABOUT INCUBATORS.

WHY cannot a farmer be favored by incubator manufacturers? asks a reader. The farmer can get all the machinery he desires, on trial, and if the work is done properly, the farmer will take the machinery, and if not, the manufacturer will take it back. But, he says, there is not one incubator put out that way, and they all hatch from 96 to 98 per cent at shows. They take out all infertile eggs; hence, how can they make such claims?

We will state that the above claim of 98 per cent is an exception, as but few make such claims. The incubator must deal with living subjects. The agricultural implement will do its work on a poor crop or a good one, but those who hatch will not ascribe the faults to the eggs but to the incubator. There is something more to learn and understand than the machine itself. The hens, their management, the season of the year, the method of keeping the eggs for hatching, the breeds, the proper mating of the fowls, the males, the feed in winter, and other details, before the eggs go in the incubator at all. A hen may break her eggs, trample her chicks, or fail to hatch, and it will be overlooked, because it is in the natural order of things, but the incubator must hatch under all conditions or be condemned. An infertile egg will not hatch, whether removed from the incubator or not. No agricultural implement will be sent out that can guarantee a crop. It is sold with the guarantee that it will do its part. It may mow the grass but will not germinate the seed or grow the crop. An incubator can only be sold under conditions that it will keep the heat at a certain temperature. No one can tell what an egg will bring forth. It is infringing close to the problem of life, and ventures into the unknown mysteries. Incubators, no doubt, would be sent out on trial also if proper allowance be made for all the conditions essential to a successful hatch, which means that the incubator manufacturer is not responsible for the hens, their management, and the lack of proper conditions of the eggs.

A BATCH OF QUESTIONS.

Sometimes a few questions from a reader may call for replies that are interesting to many others. In such cases we prefer to make up an article in order to give replies in full. A Missouri reader desires to know: 1. Which is the best incubator? We confess that we are unable to answer, as each differs from the others, and possesses advantages of its own. 2. Are hens better than incubators? If a few chicks are to be hatched, the hens are better, but for large numbers the incubator is superior. 3. How many hens would one need to make poultry pay? This depends on how much pay one wants. A hen should give a profit of one dollar a year; hence, a thousand hens can be made to produce a profit of \$1,000. 4. How many brooders should one have to each incubator? We would suggest a brooder for fifty chicks. An incubator hatching 100 chicks should fill two brooders. It is unwise to have too many chicks in one brooder.

TAKING CARE OF YOUNG TURKEYS.

It will soon be time for the young turkeys, and as they are very tender, something should be done for them before they are hatched, and that is to get rid of lice from the old birds by cleaning up their roosting places and dusting them well with insect powder. Hundreds of young turkeys die because of the large, gray lice that infest the heads, and as these pests never show themselves, they are seldom seen. They pass from the old birds to the young ones, and the loss of young turkeys

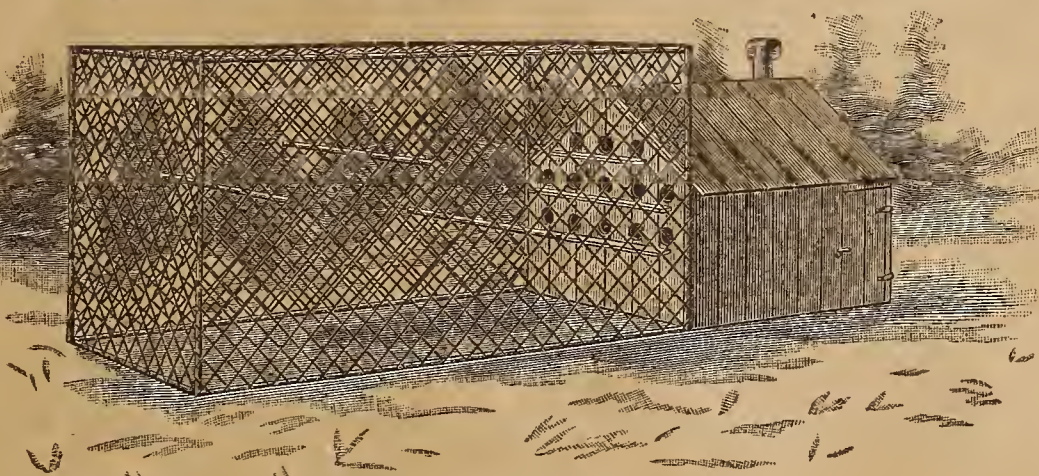
is often ascribed to some other cause than lice, simply because the lice cannot be found, though they are doing the injury.

YOUNG DUCKS.

If young ducks are kept away from the water (except for drinking purposes) there will be fewer losses among them. It is a mistake to suppose that it is necessary to allow them on the water. At this season they will easily become chilled, and cannot stand dampness. Feed them well, give plenty of drinking water, and keep them dry.

PIGEON-HOUSE WITH WIRE RUN.

The pigeon-house may be of any design or size preferred. The nests should be arranged around the sides, allowing two nests for each pair of birds. The sexes should be equal, as an extra male bird will break up the matings. The yard may be made of two-inch wire mesh, of any length or width, the top covered also with wire, and should be at least ten feet high, the higher the better. Cross pieces should be

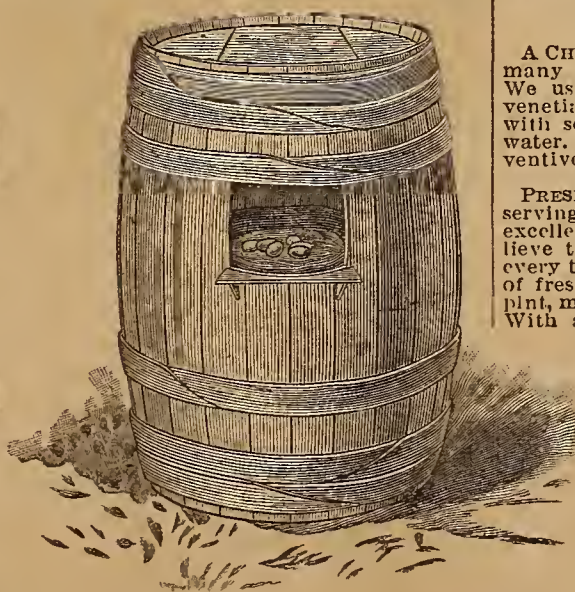


PIGEON-HOUSE WITH WIRE RUN.

arranged for the pigeons to alight upon when flying outside. A ventilator, with a cowl, should be arranged on the top, and the door should be placed so that the attendant can enter the house without going into the yard.

A NEST TO PREVENT EGG EATING.

Take a barrel or keg. Leave the top on, and cut an entrance, 10x12 inches, about one half or two thirds from the bottom. In front is a board, upon which the hen jumps before entering the nest. The alighting board should be very narrow—not over two inches wide. Fill the barrel partly with earth and then make the nest on the earth. As a hen usually stands on the ground to eat eggs, she will be unable to do so in this nest,



NEST TO PREVENT EGG EATING.

especially if a board is nailed across the barrel, inside, on a line with the top of the entrance, to prevent the hen from standing up in the nest. The top of the barrel or keg should be movable, to facilitate cleaning the nest. The barrel should be in a secluded place, with the entrance turned away from the light.

DYING IN THE SHELLS.

Just what causes chicks to die in the shells when hatching, is difficult to discover, but it is an annoyance, however. A reader states that he has operated his incubator four or five times, and he does not know if the cause is lack of moisture or not, and that the chicks seem to smother. As a rule, the cause is due to interference on the part of the operator.

The temptation to open the drawer, in order to take out the chicks, causes the temperature to fall suddenly, while the rapid evaporation of the moisture chills the chicks in the eggs. The proper mode is to not open the incubator drawer until the hatch is finished. Nor should any of the chicks be removed, but should remain in until the period for incubation is finished, taking all of the chicks out at one time. Better hatches are secured by non-interference than in any other manner. If the chicks pant in the egg-drawer, it indicates that the heat is too high.

EGGS AND THE PRICES.

The prices of eggs will gradually decline, but if the farmer is compelled to sell at a lower figure he is now able to produce eggs at less cost, and more of them. The hens will not require as much care and feed, and they will be less liable to disease. If given a good range, they can secure the greater portion of their food, and a small ration of grain, at night only, will be all

that is needed at this season to keep them in good laying condition. The farmer can better afford to sell eggs at a low price now than at a higher price in winter, if he is too busy to attend to them.

FEEDING BROADCAST.

No troughs should be used now, and but little soft food should be allowed; feed sparingly—once a day is sufficient—and scatter the grain over as large a surface as possible. This not only compels each hen to work for her food, but it also prevents some of the domineering hens from eating more than their share. The hens that hunt and scratch all day for their food are the ones that keep in good health and fill the egg-basket. There is nothing like keeping the hens busily at work.

CORRESPONDENCE.

A CHOLERA PREVENTIVE.—I notice a great many inquiries for a remedy for cholera. We use as a preventive one teaspoonful of venetian red in water for one dozen fowls, with some cayenne pepper in the ration or water. We find this to be an excellent preventive. H. O. L.

PRESERVING EGGS.—I send a recipe for preserving eggs, which I have tried, and found it excellent. I have kept eggs six months, and believe they could be kept much longer. For every three gallons of water, put in one pint of fresh-slaked lime, and common salt, half pint, mix well, and let the barrel be half full. With a dish let down the eggs, tipping the dish after it fills with water, so that they can roll out without cracking, for if they crack they will spoil. If fresh eggs are put in, fresh ones come out. Mrs. S. LINAM, Forest Home, Ala.

ANOTHER SALT METHOD.—Noticing some one had inquired for a recipe for packing eggs, I thought I would send mine. Put a layer of salt in whatever you intend to pack in, and then commence and set a layer of eggs in, the large end down, and then a layer of salt, etc., being careful to put a good layer of salt on top of the eggs. They will keep a long time and be nice and fresh. K. M. D., Cinnonsburgh, Pa.

KEEPING EGGS SIX MONTHS.—In reply to the inquiry in regard to keeping eggs, I will say that I have kept them perfectly for six months by putting a layer of salt on the bottom of a stone crock, then setting up the eggs, small end down, leaving space enough between so they won't touch, then fill in with salt. Place layer after layer of eggs and salt until the vessel is full. If the eggs are fresh and not cracked, they will keep without further trouble. I have practiced the method several years, buying eggs when they were cheap, twice a year, and packing as above directed. M. A. H., Taunton, Mass.

INQUIRIES ANSWERED.

Cross of Duck and Goose.—J. D., Bonrbon, Mo. "Will an egg from a duck mated with a gander hatch?"

REPLY:—We have never known of such a case.

Gapes.—F. H., Centre, Mo. "What should I do for gapes in young chicks?"

REPLY:—A drop of spirits of turpentine, given on a bread crumb, once or twice a day, is

one of the remedies used, though some insert the tuft of a feather down the windpipe and draw out the worms. Use lime freely on the ground.

Catalogue.—J. H. P., Dalton, Mo. "Please mail me catalogue or price list of chickens and eggs."

REPLY:—We do not sell poultry or eggs and hence have no catalogues.

Leg Weakness.—A. H. V., Monz, Va. "Is there any remedy for a hen that loses all power of standing up on her legs? She can struggle and kick, and has a good appetite, but cannot walk or even stand on its feet?"

REPLY:—Remove her from the male.

Langshan Chicks.—C. W. P., South Rehoboth, Mass. "Do young Langshans feather white when small? Also, do Hamburgs feather white?"

REPLY:—Langshan chicks are partially white when hatched, and Black Hamburgs the same. They soon become black, however, as they advance in growth.

Rye.—R. E., East Orange, N. J. "Is sound rye a suitable food for fowls? If so, should it be given to both laying hens and chickens fattening to kill? In what quantity should it be given?"

REPLY:—Clean rye is excellent for fowls and chicks, but should be fed with other grain. A pint daily to fifteen hens is sufficient.

An Egg Preservative.—C. D. M., Deerfield, N. J. "I send you a circular of an egg preservative. I have not tried it. What do you think of it?"

REPLY:—We know nothing of it, but presume that is the well-known method of preserving eggs by subjecting them to the fumes of burning sulphur.

Exposure of Chicks.—I. S., Lebanon, Mo. "Will you please tell me what ails my young chickens? When they are about a month old their eyes get red, they cannot see and their feet puff in listers. What can I do for them?"

REPLY:—You have probably allowed them to become exposed to cold draughts, especially on damp days. The best remedy is to keep them warm and dry.

Poultry-Houses and Incubators.—H. O. L., Pollock, Mo. (1) "Is hot water or hot air the better incubator? (2) Would chicken raising pay if one should have to buy feed, eggs, etc. (3) Would you suggest some simple and complete instruction on building a poultry-house. (4) Would a south slope be suitable for building a hen-house and be a good place for a range?"

REPLY:—(1) We prefer hot water, but one is as good as the other. (2) Yes, if rightly conducted. (3) We give illustrations in nearly every issue; there is no plan suitable for all. (4) Yes.

Keeping Chicks in a Room.—"Subscriber," Pittsburgh, Pa. "I have lost over fifty chickens this winter. Every one lost the use of their legs, and could not stand, just when they were two weeks old. I kept them in a very warm room, with a good fire all the time. Is fire heat good for them, or in what way should small chicks be kept warm, and in what way should a room be heated, or is a room better without fire heat?"

REPLY:—It is not an easy matter to raise chicks without a brooder over them, even in a warm room. Leg weakness results when the chicks have no access to the earth, as scratching is essential to their thrift. Artificial heat is only necessary when the chicks are not with hens.

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Queries.

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Questions from regular subscribers of FARM AND FIRESIDE, and relating to matters of general interest, will be answered in these columns free of charge. Querists desiring immediate replies, or asking information upon matters of personal interest only, should enclose stamps for return postage. The full name and post-office address of the inquirer should accompany each query, in order that we may answer by mail if necessary. Queries must be received at least two weeks before the date of the issue in which the answer is expected. Queries should not be written on paper containing matters of business, and should be written on one side of the paper only.

Wintering Sweet Potatoes for Seed.—S. L. Neligh, Neb. The subject will be treated at the harvest season.

Silver Binder Twine.—J. W. Stella, Neb. "Silver" binder twine is manufactured by the Planet Mills, New York City.

Milk Feed and Corn as Hog Food.—A. J. K. Standard, Mo. Feed corn to fatten hogs and milk stuffs to growing pigs. Corn is a fat-forming food, and the other a flesh-forming food.

Mildew on Harness.—M. T. W. Williamsport, Pa. asks: "What will prevent harness, which are not in constant use, from mildewing?"

REPLY:—Keep your harness oiled properly, and after using, clean them carefully and hang them up in a dry place.

Fertilizers for Melons.—T. J. H. Dunlap, Mo. Nothing can be better than well-rotted stable manure used in liberal quantities, and if the soil is a nice clover sward, all the better. In that case, a few tons of unleached wood ashes per acre, or twice that amount of leached ashes alone, might do very well. In any case, the addition of ashes, say a quart or two scattered about each hill, will seldom fail to do good.

Celery Going to Seed.—S. C. M., Saratoga, Wyo., asks: "What is the cause of celery running to seed? The nights are cool and plenty of water is at command. Celery ought to do well."

REPLY BY JOSEPH:—I have never had any trouble with celery running to seed. Perhaps plants were started too early in spring. I grow all my plants in open ground. Seed is sown at same time when onion seed is planted.

Rockweed as Fertilizer for Potatoes.—J. E. B., East Lamoine, Maine. REPLY BY JOSEPH:—Rock or seaweed varies greatly in composition. Usually it is rich in potash, and consequently a most excellent manure for potatoes. It is a complete manure in itself, and there is no need of adding anything to it to make it so. If a stronger effect is desired, you might try an additional application of some special potato fertilizer, like Mapes' or Bowker's, say at the rate of four hundred pounds per acre. Unleached wood ashes should not be mixed with stable or poultry manure, but each must be applied separately.

Fertilizer for Peanuts.—R. H. S., Nansemond county, Va. REPLY BY JOSEPH:—I would try a high-grade, special potato fertilizer in preference to most other chemical preparations. Much, of course, depends on the condition of soil. This may be "lop-sided," and require the addition of one certain element to restore the equilibrium. Next, it depends on the materials most easily in your reach, or that can be had at comparatively cheapest rate. Possibly, cotton-seed meal and cotton-seed hull ashes, with a slight addition of bone or dissolved rock, may give you a good mixture. No definite formula can be given, unless all the data were known to us.

Watermelons for Exhibition.—R. S. F., College Springs, Iowa. REPLY BY JOSEPH:—A few hills may be prepared by digging for each an excavation two feet square and filling with fresh horse manure. Then cover with six inches of sandy loam, and plant the melon seed in this. This may be done quite early, say two weeks before it would be safe to plant them in the open ground, provided you put a little frame around the hill, covering it with one or more panes of glass. Make the hills about ten feet apart, give good and thorough cultivation from the beginning, no other mulch being needed or wanted; remove first the glass and then the frames, when the plants are getting large and strong. Keep the bugs off; also thin to two plants to a hill, and leave only the first two well-developed melons on each vine. This will probably give you melons of good exhibition size.

Charcoal Dust.—E. T. B., Shelby, Mich., writes: "What fertilizing qualities are in charcoal dust, and for what crops is it good? Would it be beneficial to fruit trees, and have a tendency to keep the borers away if put around the trunk of a tree?"

REPLY BY JOSEPH:—Charcoal has very little direct fertilizing value. It consists chiefly of carbon, with traces of phosphoric acid and potash. Yet it has often a decided beneficial effect upon vegetation, especially on soils not sufficiently provided with vegetable matter. It absorbs and condenses gases, helps to change ammonia to nitrate, makes the soil warmer, more open and more retentive of moisture. By all means, give it a thorough trial on your soil, since it can be had so easily, and without expense. If heaped up around the bodies of the trees, it will probably keep borers out, but so will coal ashes and even common soil.

Bean Weevil—Onion Seed.—N. B. L., Lexington, Va. REPLY BY JOSEPH:—The bugs or weevils get into the beans early during the growing season. To prevent their mischief, plant in new soil, far away from the nearest bean plot of the year before, and use seed that is not infected. Old seed is safe to plant. If the beans are found to be buggy after harvest, exposure to heat or the fumes of turpentine or sulphuric acid, or mixing with a little fresh insect powder, will kill the bugs. The quantity of onion seed sown on one acre ranges from four to six pounds for marketable bulbs and from thirty to sixty pounds for sets. Growing onions for market and for sets are two entirely different things. If you want sets, you should plant and cultivate accordingly and not depend on the thinnings. I am not aware that the latter can be put to any practical use, except in a small way for the table. The book, "How to Make the Garden Pay," is published by Wm. Henry Maule, Philadelphia; price, \$2.

Sub-irrigation.—J. T. F., Rockford, Ill., writes: "I raise vegetables and small fruits. My land is sandy loam with sand and gravel subsoil. Would it do to irrigate with well water direct from the well through tile? If so, how close together should the lines of tile be placed? How deep in the ground? What sized tile should be used, and how much fall should there be to the rod? Should the lower

end of the lines of tile be closed, and would there be any danger of their filling up?"

REPLY:—We think you have a favorable opportunity to experiment with sub-irrigation. Most of your questions will have to be answered by your own experiments. Begin your experiments and extend your system of tiles from time to time as you see best. The fall will depend on the nature of the soil—the more porous it is the greater the fall. One half inch to the rod will do to begin with. Use small-sized tile, and place the lines one or two rods apart. If the lay of the ground will permit, one line of the tiles run back and forth with a slight fall will be the best plan. You can close up the lower end of the line, but leave it so that it can be opened and the tiles flooded out, if ever necessary. If left open, you will have a drainage as well as an irrigation system.

Value of Bones and Fertilizer.—C. F., Connelville, Pa., writes: "Will it pay to buy bones at thirty cents per hundred pounds and burn them for fertilizing purposes? Will the fire consume any of the phosphoric acid? Is a fertilizer that analyzes 6 to 7 per cent available phosphoric acid, 3 to 5 per cent sulphate of potash, 1½ to 2½ per cent ammonia and 85 to 90 per cent of lime, magnesite, soda, sulphuric acid, etc., worth \$30 per ton?"

REPLY BY JOSEPH:—Bones at thirty cents are a cheap fertilizer, whether you simply burn them and use the bone ashes (bone black) or manipulate them in any other way. I would prefer (in case bones could be had at this price in larger quantities) to compost them with fresh horse manure, or soften them with unleached, hard-wood ashes. The Kentucky Experiment Station recommends the following method: Break 100 pounds of bones into small fragments and pack them in a tight cask with 100 pounds of good wood ashes, which have been previously mixed with 25 pounds of dry, water-slacked lime and 12 pounds of sal-soda (washing soda). Twenty gallons of water will saturate the mass, and more may be added as required. In two or three weeks the bones will be soft enough to be turned out on a floor, and mixed with two bushels of good soil. Burning bones removes the nitrogen and other combustible materials, but leaves the phosphoric acid intact. The fertilizer of which analysis is given, should not cost more than \$25 at the highest. At the price asked for it (\$30), it probably yields the manufacturer not less than \$8 clear profit per ton.

Hemp Culture.—W. A. M., Morrow, Ohio. A recent bulletin from the Department of Agriculture gives the following method of hemp culture, which is the general practice of Kentucky growers: "The best land produces the best hemp. Virgin soil sown to hemp can be followed by hemp for fifteen to twenty years successively, sown then to small grain and clover; can be sown to hemp every third year (no fertilizer required) almost indefinitely. Given Blue-grass sod: Plow not over four inches deep in the fall or early spring; sow about the time to plant corn; sow broadcast 33 pounds of seed per acre, having first prepared the seed-bed thoroughly, and cover by dragging with the harrow as for any of the small grains, wheat, oats, etc. No cultivation can be done, of course, as it is broadcast. About one hundred days are required for the crop to mature ready for the knife, or when the first ripeness can be found in the heads. The hemp is then cut and spread thinly, covering the ground it grows upon; it must be kept from tangling. Let it lie for one or two weeks to cure; rain will not injure it in this time. Now rake into bundles and tie (be careful to keep straight), about ten inches in diameter, and stack dry, about two acres in the stack. About December 1 spread it on the ground as before, and when retted sufficiently, set upon end in shocks about the ordinary size of corn shocks, and the hands can carry their brakes from one shock to another in the field to brake it out. Much depends upon the retting, and it must be determined by testing when it is ready to take up. The approximate cost of an acre of hemp in Kentucky is about \$24."

Various Fertilizers.—G. W. H., Interlachen, Fla., asks: "What is the comparative value of cotton-seed and linseed meal as a fertilizer? Is ground bone or fish and potash more valuable on sandy land than cotton-seed meal and potash? Is air-slacked lime at \$7.50 per ton a cheap fertilizer, used with muck on sandy soil? What percentage of air-slacked lime shall I use in making a compost with pond muck and other vegetable matter? How long should it stand and how applied?"

REPLY BY JOSEPH:—The percentage of the plant-food elements is slightly larger in cotton-seed meal than it is in linseed meal, but the proportions are about the same. Both are complete manures; the chemical value of cotton-seed meal being about \$24 or \$25, that of linseed meal about \$20 to \$22. Practical test in the field will tell best whether bone or fish on one side, or cotton-seed meal on the other, make a more valuable combination with potash for your soil. Certain it is that the cotton-seed meal will give you a larger percentage of nitrogen than bone, and if nitrogen is needed, cotton-seed meal will give better results; otherwise, not. I would not pay \$7.50 per ton for air-slacked lime. Freshly-burnt lime should not cost much more, and this for composting with muck, or to sweeten mucky soils and help to decompose them, is worth a number of times as much as the air-slacked lime. Muck and lime alone, of course, do not make a complete manure. If possible, use wood ashes and a little phosphate to mix with your muck, or lime, phosphate and potash. The compost heap will improve with age, for a certain length of time, but may be used after being thoroughly shoveled over a few times, with intervals of a few weeks between. Apply as a top dressing, to be harrowed or hoed in.

Broom-corn Culture—Machinery.—W. A. T., Akin Farm, Ark. You can get broom-corn machinery from G. D. Colton & Co., Galesburg, Ill. "Brooms and Broom-corn," a practical treatise on the subject, price 50 cents, published by the American Agriculturist, 751 Broadway, N. Y., will give you full information. You can get a few "pointers" from the following article from the American Agriculturist: "Broom-corn can be grown in almost every part of the United States. Unless the crop can be held over when prices are low, broom-corn growing cannot be recommended, as the price of no other crop fluctuates more—from forty to three hundred dollars per ton. Also, on a heavy clay soil, or on foul land, it will hardly be profitable. It is a crop that requires so much work that its average cost will be from fifteen to twenty dollars per acre. The average yield per acre is six hundred pounds. There are only two varieties worth growing. The dwarf variety, which grows only three to four feet high, is little cultivated, its brush being used only for whisks and clothes-brushes. The Evergreen, Missouri or Tennessee, is the standard variety. It yields a long, fine brush, and retains its green color till the

seeds ripen. Broom-corn requires more warmth than Indian corn, hence, does best on a sandy or black loam soil, and in the North the ground should be plowed in the fall or very early in the spring, and put in fine tilth for the crop. But nothing is gained by planting before the ground is warm. It is of the utmost importance to get good seed; select the best seed, "swim it," and reject all that floats. On very clean land it may be put in drills three feet apart, the stalks in the drills three to four inches apart. Otherwise, plant in rows three feet apart, hills two feet apart in the rows, six to eight stalks in the hill, and drop only enough for thinning is a tedious, hard job. Cover lightly, not deeper than an inch. Its cultivation is the same as for Indian corn, but must be thorough. Usually, at least one hoeing will be required. The ground must be clean and mellow when the crop is young."

VETERINARY.

Conducted by Dr. H. J. Detmers, Veterinarian of the Ohio Agricultural Experiment Station, and Professor of Veterinary Surgery in Ohio State University.

To regular subscribers of FARM AND FIRESIDE, answers will be given through these columns free of charge. Where an immediate reply by mail is desired, the applicant should enclose a fee of one dollar, otherwise no attention will be paid to such a request. Inquiries should always contain the writer's full address. Queries must be received at least two weeks before the date of the issue in which the answer is expected. Subscribers may send their veterinary queries directly to Dr. H. J. DETMERS, 35 King Avenue, Columbus, Ohio.

Bloody Milk.—W. H. L., Davenport, Iowa. Milk thoroughly, at least three times a day, but in a very gentle manner. A change of diet also may be required.

Exostosis.—G. F., Jamestown, North Dak. If the hard lump (exostosis) is not painful, but is growing, it may be best to remove it by means of a surgical operation.

Barren Mare.—J. L. A., Echo, Oregon. It is often exceedingly difficult to ascertain the cause of not breeding, even if a thorough examination can be made, but it is utterly impossible without it, especially if nothing is known about the history of the animal. There are too many possibilities.

Spavin.—T. P. S., Orchard, Mo. I do not know of any remedy that will "dissolve and take the spurious bone out," consequently cannot comply with your request. If you will look over the western edition of FARM AND FIRESIDE of January 15, you will find an article on the treatment of spavin and ringbone.

Lousy or Mangy.—E. M., Potter Hill, R. I., writes: "I have a five-year-old mare that won't eat and is falling in flesh. She is all the time biting her ribs and hips. Her coat is rough and the skin dry and tight."

ANSWER:—Your mare, very likely, is lousy, or, may be, mangy. If the former, clean and curry her, wash her with a tobacco decoction, and send her to pasture. The young grass will do her more good than medicine.

An Exostosis.—F. G. S., Orrville, Mo., writes: "I have a mule that has a hard or bony knot, about the size of a guinea-fowl egg, on the right fore leg, situated in front on the first joint below the knee. It does not lame her only in the morning. It swells slightly after she pulls hard."

ANSWER:—The "hard or bony knot" complained of seems to be an exostosis. As it is situated in front of, or very close to, a joint, does not cause any lameness, and as the animal is a mule, you had better leave it alone.

Probably a Stone or Gravel in the Bladder.—J. F. C., Fox, Ala., writes: "I have an ox seven years old, which seems to be diseased in his urinary organs. While urinating he strikes himself with his hind feet and seems to be in great pain."

ANSWER:—Your ox may have a stone or some gravel in its bladder. A diagnosis can be secured by a careful examination of the bladder through the rectum. If a stone, concretions or gravel is found, the treatment consists in a surgical operation to be performed by a competent veterinarian. But in such a case it may be more profitable to fatten the ox for the shambles. If the difficulty complained of is caused by something else, your inquiry fails to indicate what it may be.

Roaring.—J. G., Harnersville, Pa. "Roaring" can have several causes; in fact, anything that partially obstructs the air passage to or from the lungs can cause roaring. Its most frequent cause consists in paralysis of the recurrent nerve, especially on the left side, and consequent paralysis of the muscles of the corresponding arytenoid cartilage of the larynx. Besides that, anything that causes a compression of the trachea (wind-pipe) or any other part of the respiratory passage from the outside, or diminishes its width by any means whatever, for instance, the presence of a tumor, polyp, or any other morbid or abnormal growth, may cause roaring. The remedy, in all cases, can consist only in a surgical operation. Blistering can do no good.

Infections Abortion.—F. B., Wall Lake, Iowa. If several cases of abortion have taken place in a stable, all cows yet with calf should at once be removed to another, non-infected place. After this is done, the infected stable should be thoroughly cleaned and be disinfected. Cows which just have aborted should also be disinfected. This is best done by injecting, say about a quart of a solution of corrosive sublimate, 1 to 1,500 or 2,000, into the uterus. The solution, when injected, must be warmed to about 100° Fahrenheit, and the injection itself must be made very carefully. Since you confound microbes or bacteria with small animals, it will be useless to make an attempt to explain the cause, or to give the reasons for the above treatment.

Strained Tendons and Ligaments.—J. C. W., South Sndbury, Mass., writes: "I have a mare whose hind fetlock joints snap or crack every time that she lifts those feet to shift her position. She has had little exercise the past winter. I first noticed this snapping about a year ago. She had a lame spell then in one of her hind legs, in the hock or fetlock joint. Think the lameness then was brought on by overloading. Before that she always stood squarely on her hind feet, now one or the other of them is always resting on the toe. She also stands a great deal with the heels of both hind feet on the edge of the stall drop. When I take up one of her hind legs she draws it way up to her body, and then puts it down slowly. She used to trot well, now she breaks into a gallop when speeded. I notice that her hind fetlock joints frequently knuckle over when jogging along. Evidently, she cannot put those feet down strong and sure."

ANSWER:—A year ago, when the animal was overloaded, the tendons and ligaments of the hind legs gave way, were severely strained,

hence the lameness. The latter disappeared when the active inflammation, and consequently the pain, subsided, but the strained parts never regained their normal condition, hence the unsteadiness or knuckling over in the pastern joints. The injury is now too old to admit recovery.

Lymphangitis.—E. A. E., Marshall, Minn., writes: "My six-year-old mare has knots and lumps on the cords of her right, front leg, from the hoof to above the knee. The hair comes off at the time the lump appears, and afterwards the lump usually breaks, then heals up, but the hair does not grow, and the lump does not disappear. After two or three weeks the same lump may come to a head again, or others form."

ANSWER:—The disease of your mare, it seems, is lymphangitis, that is, an inflammation and abscess formation in the lymphatics. The treatment of this disease is rather tedious, and if the case is an inveterate one, its results are often very uncertain. Besides this, the disease presents a great many similarities to farcy. I therefore advise you to have your mare examined and treated by a competent veterinarian. Poulticing can do no good, has even a tendency to make it worse. Far better results are obtained by a judicious use of antiseptics and even caustics. If you have no veterinarian within reach, consult with your family physician.

An Affection of the Respiratory Passages.—G. W. G., Mansfield, Ohio, writes: "My horse has contracted a habit of tossing his head, and when reined up does it much more than at other times. He has a cough which at times seems dry and then again has a rattling sound. At times it seems as if something breaks, and then his nostrils run freely, the discharge being yellowish white in color. Just before and at the time it runs his cough seems loose, and a slight gurgle may be heard when he breathes. He does not cough much, only once or twice at a time. He eats well and is generally in good spirits, but is not as lively when his nostrils run as at other times."

ANSWER:—Yours is one of those cases that need an examination by a good veterinarian. From your description, it appears to be possible that there may be some obstruction in the respiratory passage—may be, a few larvae of the bot-fly, attached to the mucous membrane high up in a nasal cavity, in the larynx or in the trachea. But this, of course, is only a possibility. I therefore advise you to have your animal examined by a competent veterinarian.

Arthritis.—W. D. C., College Corner, Ohio, writes: "What ailed my colt? It was foaled straight, sound and all right, and continued the same until the third day, when it lost the use of its left hind leg. During the same day the hock joint began to swell. On the second day after this the left knee joint swelled, and a day or two after the other knee commenced to swell. They all kept swelling more and more till it died, when it was ten days old. It sucked well up to the last and I thought it grew. There was nothing the matter with the other hind leg. The mare was fed on bran before and after she foaled. Do you think the feed had anything to do with it, or had it rheumatism?"

ANSWER:—Your colt died of a disease known as rheumatic arthritis, a disease which usually leads to death if it occurs in a severe form in a colt only a few days old, like yours. If it attacks older animals, colts over a week old, it usually yields to treatment—external applications of tincture of iodine once or twice a day. It occurs most frequently if the mare is not treated as a brood mare should be treated, but if the mare, especially while heavy with foal, is used on the road, treated like an old plug, and fed heavy food. Dirty stables, also, appear to have something to do with it.

Rabies.—J. L., Forest Home, Ala., writes: "We lost a cow, which our neighbors said was bitten by a mad dog and had hydrophobia, but we could not think so, from the fact she would notice when spoken to. She was vicious after hogs and chickens, but did not try to run at any person. She refused to eat; she lived four days after refusing to eat, and toward most mournfully, and the last day or two, when she lay down she would fall and have fits; she was constantly pawing the ground, and seemed to have terrible pain in her head, her eyeballs were as red as could be. She would soon have had a calf, sometimes she seemed to be in labor, then turn quickly and smell the ground, then she would be more vicious. Several other cows have died with the same disease here."

ANSWER:—If your cow was bitten by a rabid dog, there can be no doubt that she died of rabies, usually misnamed hydrophobia, because your very intelligent and interesting description almost completely covers the symptoms of that terrible disease as they manifest themselves in cattle. Your cow, probably, was naturally a docile animal, therefore no wonder she noticed it when spoken to, and did not endeavor to attack human beings. It is seldom that cattle affected with rabies show a plainly developed tendency to bite; they use their natural weapons, their horns.

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Recent Publications.

EXPERIMENT STATION BULLETINS.

Sent free, on application, to residents of the state in which the station is located. Address Agricultural Experiment Station.

ALABAMA.—(Auburn) Bulletin No. 31, March, 1890. Microscopic study of certain varieties of cotton. Illustrated.

COLORADO.—(Fort Collins) Annual report for 1889. Bulletin No. 10, January, 1890. Tobacco.

CONNECTICUT.—(State Station, New Haven) Bulletin No. 102, March, 1890. Fungicide.

IOWA.—(Ames) Bulletin No. 8 (Including annual report), February, 1890. (1) Iowa station milk test. (2) Sweet cream butter. (3) Sugar beets. (4) Sorghum. (5) Annual report.

KENTUCKY.—(Lexington) Bulletin No. 24, March, 1890. The broom-rape of hemp and tobacco. Bulletin No. 25, April, 1890. Strawberries.

MARYLAND.—(Agricultural College P. O.) Annual report for 1889.

MASSACHUSETTS.—(State Station, Amherst) Annual report for 1889. Bulletin No. 33, March, 1890. (1) Production and selection of fodder crops. (2) Economical feeding of farm livestock.

MICHIGAN.—(Agricultural College P. O.) Bulletin No. 57, March, 1890. Vegetables, comparative tests and methods of culture. Bulletin No. 58, March, 1890. Insecticides: the arsenites, carbollized plaster, kerosene emulsion, buhach or pyrethrum, kerosene oilment, carbolic acid, Bordeaux mixture, white hellebore, bisulphide of carbon, cyanogen.

MISSOURI.—(Columbia) Bulletin No. 10, April, 1890. Analyses of apples at various stages of growth. Bordeaux mixture for grape rot. Comparative tests of small fruits and potatoes.

NEW HAMPSHIRE.—(Hanover) Bulletin No. 9, February, 1890. Effect of food upon milk. Bulletin No. 10, March, 1890. Co-operative fertilizer experiments. Comparison of manure, prepared fertilizer, ashes and chemicals.

NEW JERSEY.—(New Brunswick) Bulletin No. 65, January 31, 1890. Experiments with different breeds of dairy cows. Special Bulletin K, February 28, 1890. The insects injuriously affecting cranberries. Bulletin No. 66, March 1, 1890. Fertilizing materials: (1) Prices of nitrogen, phosphoric acid and potash. (2) Economical purchase and rational use of nitrogen, phosphoric acid and potash.

NORTH CAROLINA.—(Raleigh) Bulletin No. 69, February 26, 1890. Fertilizer analyses, and the fertilizer control, season of 1890.

OHIO.—(Columbus) Bulletin No. 1, Vol. 3, January, 1890. Experiments with potatoes: (1) Comparative tests of varieties. (2) Trial of fertilizers. (3) Cutting seed. Bulletin No. 2, Vol. 3, February, 1890. Commercial fertilizers: (1) Introduction. (2) Experiments on corn. (3) Experiments on oats. (4) Experiments on wheat. (5) The sources and cost of commercial fertilizers. (6) Analyses of fertilizers. (7) Commercial valuation of fertilizers.

ONTARIO.—(Agricultural College Farm, Guelph) Annual report for 1889.

SOUTH DAKOTA.—(Brookings) Bulletin No. 13, February, 1890. The sugar beet. Bulletin No. 17, March, 1890. Small grain.

WISCONSIN.—(Madison) Bulletin No. 23, April, 1890. Prevention of apple scab.

CATALOGUES RECEIVED.

Catalogue of Star Drilling Machine Co., Akron, Ohio.

Steam engines and boilers made by Erie City Iron Works.

Applian supplies, Italian queens and bees. J. W. Clark, Clarksburg, Mo.

Catalogue of American Evaporator. American Mfg. Co., Waynesboro, Pa.

Catalogue of threshing machinery, made by the O. S. Kelly Co., Springfield, Ohio.

Circulars of Moseley's Occident Creamery. Moseley & Pritchard Mfg. Co., Clinton, Iowa.

Catalogue of buggies and harness, made by Wilber H. Murray Mfg. Co., Cincinnati, Ohio. Patent Double and Single Metal Railway Hay Carrier Tracks. F. E. Myers & Bro., Ashland, Ohio.

"The Klud of Feed We Make." A circular from Continental Food Product Co., Waukegan, Ill.

Catalogue of Keystone Hay Loader and Galt Side-delivery Hay Rake. Keystone Mfg. Co., Sterling, Ill.

Catalogue of Boomer & Boschert Press Co., Syracuse, N. Y., makers of knuckle joint screw and hydraulic wine and cider presses.

Buckeye Portland Cement, made by Buckeye Portland Cement Co., Bellefontaine, Ohio. A cement really superior to the best imported article.

BESIDES supplying the wants of its own population, France exports to Germany, Belgium, Holland, Denmark and Sweden large quantities of salted and smoked geese for winter provision.

TEN million young whitefish from the government fish hatchery on Lester river, Minnesota, have been placed in Lake Superior this spring, and it is intended to place fifteen millions more there at once. Science assumes that about one fourth of these will probably survive, maturing in four years, if the illegal work of the net fisherman can be prevented.

Our Miscellany.

USEFULNESS.

The motes up and down in the sun
Ever restlessly moving we see;
Whereas the great mountains stand still,
Unless terrible earthquakes there be.

If these atoms that move up and down
Were useful as restless they are,
Than a mountain I rather would be
A mote in the sunbeam so fair.

—Charles and Mary Lamb.

LACK of pure water often accounts for the lack of eggs.

It is better to have one hired girl and pay her, than half a dozen servants who get no wages.

Most people would succeed in small things if they were not troubled with great ambitions.—Longfellow.

THEY say now that apples, and not fish, is the real brain food. Of course. And what is the prejudice against gooseberries?

A FLOCK of twenty-five hens well cared for is more profitable than one hundred hens that are made to look out for themselves.

OUR READERS will not regret reading the "Starved Rooster" advertisement of The Aultman & Taylor Co., in this column.

AN Englishman claims that he has cured himself of rheumatism by placing under each post of his bed a broken bottle, which served the purpose of an insulator.

THOROUGHLY dust the plumage of setting hens with bulhach powder a day or two before the eggs hatch, and again as soon as the birds are off the nest. It will pay.

BEECHAM'S PILLS cure sick-headache.

JUDGE MOLVAINE, at Washington, Pa., recently handed down a decision holding that oil-well pumping on Sunday was Sabbath desecration within the meaning of the law.

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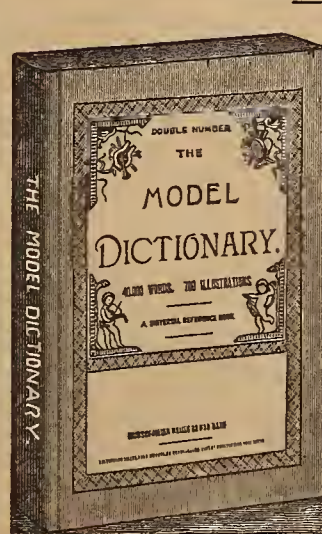
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Smiles.

LOST.

'Twas a summer ago when he left me here—
A summer of smiles with never a tear,
'Till I said to him with a sob, my dear—
Good-by, my lover, good-by!

For I loved him, oh, as the stars love night!
And my cheeks for him flushed red and white
When first he called me his heart's delight—
Good-by, my lover, good-by!

The touch of his hand was a thing divine
As he sat with me in the soft moonshine
And drank of my love as men drink wine—
Good-by, my lover, good-by!

And never a night, as I knelt in prayer,
In a gown as white as our own souls were,
But in fancy he came and he kissed me there—
Good-by, my lover, good-by!

But now, oh, God! what an empty place
My whole heart is! Of the old embrace
And the kiss I loved there lives no trace—
Good-by, my lover, good-by!

He sailed not over the stormy sea;
And he went not down in the waves—not he—
But, oh, he is lost, for he married me—
Good-by, my lover, good-by!

—James Whitcomb Riley.

A DUFFER MEETS A CONSUMPTIVE.

YOU have seen the duffer—a bul-
lug big fellow, with a bullet
head and lots of wind and fat,
but without an ounce of sand
in his craw. He always picks
his man, and he always means
to be certain that he has got
hold of somebody who can be
bluffed and bulldozed.

There was a chap of this sort—
a duffer from Duffersville—in the crowd of pas-
sengers obliged to wait at the depot in Decatur,
Alabama, for several hours on account of a rail-
road accident. After half an hour everybody
sized him up for what he was, but he was per-
mitted to go blowing around because no one
wanted the excitement of a row. He boasted of
his fights and his victories, and he tried
hard to pick a fuss with two or three farmers,
and finally got his eye on something good. It
was a tall, slim, hollow-eyed man from Ohio,
who was evidently on his way to Florida to die
of consumption. He had a deathly look to his
face, and as he wandered up and down the
platform he coughed in a hollow and dismal
way. Duffer arranged to meet him in his
walk, and at once loudly demanded:

"Did you move my valise off the seat?"
"No, sir," was the reply.

"Well, I want to find the man who did; I
can mop the earth with him in two minutes."
"Well, I don't care who it was."

"Oh! You don't! Mighty independent, you!"
"Go away from me, sir! I don't know you
and don't want to."

"Don't you? If you were only a well man
I'd make you eat mud. As it is, don't give me
too much sass or I'll teach you manners."

"You are a loafer, sir—a first-class loafer!"
said the Buckeye as he continued to walk.

"I never strike a sick man," replied the
other, "but I will tweak your nose once just to
reduce your temperature. Now come—"

He reached out with thumb and finger, but
he didn't get the nose. Instead of it he got it
bliff! bang! in the face with the right and left,
and as he went down the consumptive kicked
him to his feet and knocked him over a bag-
gage truck. He didn't get up again until two
men assisted him. He had two bunged eyes,
a bloody nose, and a bleeding mouth, and he
looked about in a helpless way, and stam-
mered:

"Gen—gentlemen, lead me off somewhere
where I can be alone."

When he had gone some one asked the con-
sumptive if he wasn't afraid the exertion
would give him a hemorrhage, and he replied:
"What do you take me for?"

"Aren't you a northern consumptive on
your way south?"

"Not for Joseph! I'm a professional contor-
tionist on my way to fill an engagement in
Cincinnati. I saw that duffer sizing me up,
and so played to catch him. If he should
want anything more, send him around."

THE MIGHTY FALLEN.

He had returned to his village home from a
trip to Washington, says the *New York Sun*,
and that same evening he appeared at the
drug store to entertain an admiring audience
with his adventures.

"Saw our congressman, I suppose?" queried
the blacksmith.

"Of course, and took dinner with him."

"You did, eh? By George, but that shows
we are no one-horse folks here! See the pres-
ident?"

"I did, by special appointment."

"Shake hands with him?"

"I did."

"Seemed to be glad to see you?"

"Yes, sir."

"Ask you to sit down?"

"He did."

"Stay long?"

"About fifteen minutes."

"Ask you to call again?"

"He did."

"Did you call him Ben?"

"Why, no."

"You didn't dare call him Ben."

"Certainly not."

"Well, that's all I want to know, sur! You
own the grist mill, woolen factory, three stores
and the tavern, and have been to the legisla-
ture and given us to understand that you
were a heap of a feller, but you han't. You
went down to Washington and sat on the edge
of a cheer and talked to the president, and
dasn't call him Ben, and I don't foller you any
further! Come on, boys, let's go up to
Church's grocery and see that feller who fit
seven rounds of a prize-fight in Buffalo last
week."

IT WAS INTIMIDATION.

It was in University place, says the *New
York Sun*. A boy, preceded by a dog, was
crossing one of the paths when he encountered
a woman preceded by a smaller dog. The two
canines halted. So did their respective own-
ers. The animals looked at each other fixedly
from a distance of six feet, each with his tail
waving over his back, and each uttering low
growls.

"Call off your dog!" exclaimed the woman,
as she saw the situation.

"Call off yours!" replied the boy.

"Can't you restrain your dog?" she de-
manded, in a high key.

"He an't doin' nuthin'."

"Yes, he is; he's intimidating my Fido."

"But your Fido is givin' him sass. I an't
goin' to restrain my dog when your dog is
a-sayin' he kin lick him with one hand tied
behind him."

"Here, Fido; haven't you more care for
your reputation than to face such a low-down
dog as that? Come here this instant! I shall
punish you for this!"

"Here, Shakespeare," said the boy as he gave
his dog a light kick, "you let that animal
alone. You tackled one just like him last fall
and you had indigestion for two months. He
an't alive; he's just pretendin' to be. He's a
stuffed lamb with a dog's tail glued on, and
the woman works him with a string. Come
along with me, and I'll show you a regular
live dog down here."

LIQUID ENERGY.

A correspondent of the *Buffalo Commercial*
relates that while himself and a doctor were
travelling in Virginia they came upon an old
colored man whose mule, attached to an old,
two-wheeled vehicle, was in the dumps and
wouldn't go. "Dis mule am balked, boss,"
said the old man, "an' I'il jis' gib a dollah to
de man dat can start 'm." "I will do it for less
than that, nuncle," said the doctor. He took
his case from the carriage, and selecting a
small syringe, with it injected some morphia
into the animal's side. The mule reared, gave
a loud bray and started off at railroad speed.
The Negro gave a look of astonishment at the
doctor, and, with a loud "Whoa!" started
down the road after the mule. In the course
of ten minutes they came up to him, standing
in the road, waiting. The mule was nowhere
in sight. "Say, boss," said the colored man,
"how much is dat stuff worth you put in that
mule?" "Oh, about ten cents," laughingly re-
plied the doctor. "Well, boss, yo' kin squirt
twenty cents' wuf in me right away. Heah
am de cash. I must ketch dat ar mule."

READ CAREFULLY.

Our readers should not fail to read every
word of the large advertisement of the
"Murray" Buggles and Harness, which appears
in this issue. The prices at which the "Murray"
people offer their goods direct to consumers
seem almost incredible, but we know the
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their buggles and harness are everything that
they claim for them, and when any of our
subscribers send them an order they can rest
assured that they will be pleased with what
they buy. The "Murray" people appreciate
the large circulation of the FARM AND FIRESIDE
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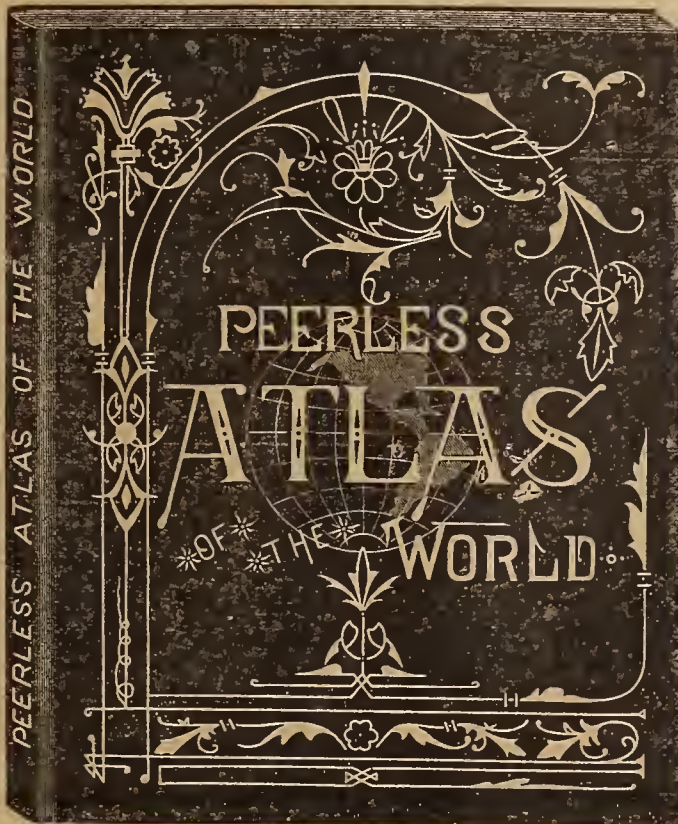
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DESCRIPTION OF THE PAINTING The scene chosen for the painting is the "Judgment Hall" in the palace of Pilate, and the hour "early in the morning." Around the Governor the priests are gathered, and the high-priest, Caiaphas, is accusing Christ and demanding his death. The central figure, and the most impressive of all, is Christ himself, clad in white, with flowing hair and bound wrists. He stands alone in the simple majesty of his own personality, without sign or symbol, save his individual greatness. A heavenly submission is on his face.

The Markets.

	CHICAGO.	NEW YORK	N. ORLEANS
BUTTER.			
Fancy Creamery...	17 1/2 @ 18	18 @ 19	20 @ 21
" Dairy...	14 @ 15	15 @ 16	12 @ 14
Common...	5 @ 8	5 @ 8	6 @ 10
GRAIN.			
Wheat No. 2 spr'g	89 1/4 @ 89 1/2		
" No. 2 w't'r	89 1/4 @ 89 1/2	97 @ 97 1/2	
Corn...	31 1/2 @ 33	41 @ 46	42 @ 46
Oats...	24 @ 27 1/2	33 @ 35	36
LIVE STOCK.			
Cattle, Extra...	4 90 @ 5 30	4 75 @ 5 25	
" Shippers...	3 40 @ 4 85	3 50 @ 4 12	3 00 @ 3 75
" Stockers...	2 40 @ 3 90		
Hogs, Heavy...	4 10 @ 4 40	4 70 @ 4 80	3 50 @ 4 75
" Light...			
Sheep, com. to good	4 60 @ 6 00	5 00 @ 7 10	2 50 @ 3 00
Lambs...	6 10 @ 6 20	6 80 @ 5 00	
PROVISIONS.			
Lard...	6 20 @ 6 30	6 59 @ 6 62	5 62 @ 5 75
Mess Pork...	12 80 @ 13 00	13 75 @ 14 00	13 50 @ 14 00
SEEDS.			
Flax, No. 1...	1 49		
Timothy...	1 33 @ 1 46		
Clover...	3 45 @ 3 60		
WOOL.			
Fine, Ohio & Pa.	31 @ 34		
" Western...	29 @ 33		
" Unwashed...	17 @ 21		
Medinn, Ohio & Pa.			
" Western...	23 @ 26		
" Unwashed...		35 @ 41	
Combing & Delains			
Coarse & Black...	19 @ 21		

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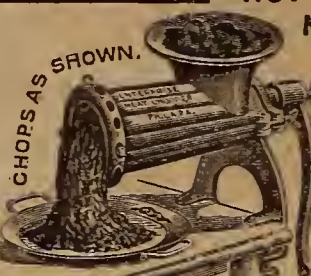
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for several years, and give it our hearty endorsement for the large
increase in quantity and especially in quality of Butter. This system
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EASTERN EDITION.

VOL. XIII. NO. 17.

PHILADELPHIA, PA., and SPRINGFIELD, OHIO, JUNE 1, 1890.

TERMS 50 CENTS A YEAR.
24 NUMBERS.

The Circulation of FARM AND FIRESIDE
this issue is

250,600 COPIES.

The Average Circulation for the 10 issues of
the first 5 months of this year has been

250,730 COPIES EACH ISSUE.

To accommodate advertisers, two editions
are printed. The Eastern edition being
100,200 copies, the Western edition
being 150,400 copies this issue.

Farm and Fireside has the Largest Circulation
of any Agricultural Journal in the World.

Current Comment.

ON another page of this issue will be found the first part of an article on the adulteration of food. This is an evil of alarming extent. According to the report of a special investigation made last year by the Department of Agriculture, about fifteen per cent of the food sold in this country is adulterated or misbranded, making a total annual loss to the people of hundreds of millions of dollars. The evil is now so widespread that it has become an important subject of legislation. Some of the states already have good laws on the subject, and committees of the present congress have reported in favor of passing a national law against the adulteration of food.

It is not only the rapacious avarice of unscrupulous dealers that causes so much adulteration and cheapening of foods. The consumers themselves are partly to blame for it, and they could prevent some of it if they would. For example, a grocer has a number of mixtures of sugars, running from pure, refined cane sugar down to cheap grape or starch sugar. When customers ask for sugar he shows them the different mixtures, finds out what price they want to pay and then sells them the grade to suit that price. Probably more than half the buyers will select a low-priced sugar, under the impression that it is the cheaper, and that they are getting a great bargain. The starch sugar being about one third the real value of cane sugar, it is easy for the dealer to mix the two in such different proportions as to give grades for different selling prices and still clear more money from the sale of the mixed than from the pure cane sugar. Customers want something cheap, and the dealer finds no difficulty in giving them what they want and profiting largely by his sales.

It is safe to say that if a grocer were to place a complete line of absolutely pure and good groceries alongside a line of low priced, adulterated ones, half his customers would, of their own free choice, buy the latter on account of the apparent cheaper prices. We say apparent, because the pure goods are really the cheaper, to say nothing of the many dangers to health arising from the use of adulterated foods. Much of the inducement to frauds of this kind would be removed if customers were to firmly demand pure goods and willingly pay a fair price for them. In a struggle between buyers and sellers to get the ad-

vantage over each other in prices, the buyers usually get worsted. There is such a thing as fair dealing, and there are good, pure goods on the market, and the wise buyers will secure both.

Violent opposition to legislation against adulteration of food is, of course, to be expected from those with whose nefarious business it interferes. But in this connection it is a surprise to see the stand taken by some of the Farmers' Alliance-men of the South in reference to the Conger compound lard bill, on the ground that it will destroy the cotton-seed oil industry in the interests of swine raisers. As before shown, the revenue tax imposed by this bill will fall heavier on lard than on cotton-seed oil, and it cannot hurt a legitimate industry. Hence, we have the spectacle of farmers coming up to the support of the cotton-seed oil trust and the Chicago combine that turns out a product known as compound lard. Either these farmers are being made the tools of the trusts, or they are boldly advocating the adulteration or sophistication of food. If the latter is the case, what possible ground can they have for objection to the adulteration of numerous articles they must purchase? If cotton-seed oil is a good substitute for lard, let it be sold under its own name and on its own merits. Its own merits will, in time, give it its proper place.

ONE of the leading daily papers of New Orleans recently reported the arrival in that city of a cargo of beet sugar from Europe.

The question arises, how does it come that Europe can send sugar to the center of domestic sugar production in this country, and sell it there in competition with the gulf coast and the West Indies?

The beet-sugar industry has been developed to such an extent that half the world's supply of sugar is now produced from beets, and the cost of production has decreased until Europe can compete with the best cane sugar districts in the world.

This development has been caused by governmental aid. Whatever strong objections there may be to bounties, the fact remains that they have made the beet-sugar industry what it is. It has taken over a century to build up the beet-sugar industry in Europe, but it need not take one twentieth part of that time to establish it in the United States. We do not have to develop a new industry, but simply to adopt one already completed. Considering what government bounties have done for the sugar industry in Europe, this country has no need to fear anything from adopting the same plan.

NOT many years ago it was the custom when a horse or other domestic animal was taken sick for the owner to commence doctoring it himself, whether he knew what was the matter or not. If the animal got worse, he sent for his neighbors and indiscriminately tried all the remedies they suggested. Finally, the neighborhood "horse doctor," usually an empiric of crude knowledge and more or less experience, was called in to prescribe his favorite specifics. If the animal did not have a constitution strong enough to

stand both the dosing and the disease, it died. Then came a period when there was a wide sale of books on domestic animals that could be classed under the head of "Every Man His Own Horse-Doctor." It is needless to say that the method of naming the diseases and selecting remedies for sick animals, by comparing their symptoms with printed descriptions, was not an unqualified success in the hands of the average stock owner, whose knowledge of medicine and surgery is very limited.

The time has now come in all truly progressive farming communities, when it is recognized that sick domestic animals should be treated in the same way that human beings are treated by a good physician, and that the services of a trained and skillful veterinarian are needed. And as time goes on, the services of good veterinary surgeons will be better appreciated and more and more in demand.

Veterinary medicine is now a good field for the right kind of young men to cultivate. Some of the agricultural colleges are now provided with a good department of veterinary medicine and are, year by year, enlarging their facilities for the accommodation of veterinary students. In this connection we are pleased to notice that the last General Assembly of Ohio, among its appropriations to the Ohio State University, at Columbus, made one of several thousand dollars for a building, which will give the veterinary department of that institution ample room, good hospital and clinical facilities. The new building will contain lecture rooms, laboratories, apartments for patients, etc., and it is expected that it will be ready for use by the opening of the fall term, September 17, 1890. The University will then be able to offer to students of veterinary science as good facilities for thorough and practical instruction as are to be found anywhere in America. The professor of veterinary medicine is Dr. H. J. Detmers, a man of national reputation, of high scientific attainments and an enthusiast in his profession.

The legislature is to be commended for making a liberal appropriation for the use of a practical and scientific department of the University. And all true friends of the University, who have been fearing that it was drifting too far away from the practical, mechanical and scientific toward the literary, will be pleased to see the movement in the other direction.

FROM experiments in the treatment of vine diseases made in several states last year, under the direction of the Department of Agriculture, it would seem that the Bordeaux mixture, containing six pounds of copper and four pounds of lime to twenty-two gallons of water, is the most reliable remedy known. The ammoniacal carbonate of copper solution, however, gave excellent results, with the advantages that it is cheaper and does not spot the fruit. Mr. Galloway, the chief of the Section of Vegetable Pathology, recommends the use of the Bordeaux mixture for the first three treatments and the ammoniacal solution the rest of the season. A recent bulletin prepared by him tells how to prepare and apply the remedies.

The ammoniacal solution was found to be excellent for treating the apple scab.

EDWARD ATKINSON, the political economist, on being asked by the *New York World* on the causes of poverty, said, concisely, "Ignorance and incapacity." Chauncey Depew replied as follows:

"There are a good many causes of poverty," he said, after reflecting a moment, "and they are by no means perfectly clear. There are hundreds of men whom I have helped, and am helping continually. They seem to be utterly unable to earn a living for themselves. I never could discover why. They have had the same advantages and opportunities as I have had.

"Lack of self-confidence is often the cause of failure. Many men seem to have no faith in themselves, consequently no assertiveness, no independence, no pluck and no push. They seem to be afraid to stand up and speak for themselves, and prefer to lean on others. Poverty in such cases is inevitable.

"Another cause of poverty very prevalent in this country to-day is that many young men are wanting in decision and fixity of purpose. If they get into a good place at the start, they should stick to it, knowing that by perseverance, industry and ability they win promotion in due course as vacancies occur. But they see or hear of some one making a fortune in Wall street or in ranching or mining, and away they go to try their luck. When they lose, as they do in ninety-nine cases out of a hundred, that is the end of them; they can never settle down to ordinary ways of earning a living after that, and their descent is rapid.

"Rum is the greater cause of poverty; it is the cause of more poverty than all the other causes put together. When a man drinks to excess he lets go of everything. He loses his position, and is unable to secure other employment. A drunkard cannot be trusted with work or responsibility. He and those dependent upon him, if he has a family, become paupers. They have to be helped, first by their neighbors, and then by the town. In my own personal experience I have known about fifty thousand men who have been ruined by rum. These causes account for the failure of men who are willing to work, but are unable to secure and keep regular employment. There is a vast amount of poverty caused by men who would rather loaf than work. When a man finds his mission in the world, he should remain constant to it and not leave one trade or business to engage in another for which he may be unfitted. Poverty often results from such aimlessness. But the lazy man is always a poor man."

It is a very common thing to hear people grumble and growl about hard times and taxes, particularly the taxes, and not say a word about the enormous amount of money wasted for intoxicating drinks. It is estimated that the total annual taxes, municipal, state and national, average about \$15 to each one of the 60,000,000 population. It is also estimated that the total annual loss to the national wealth from the evil effects of intoxicating liquors is not less than \$1,500,000,000, \$25 to each person.

THE STANDARD, a single tax organ, after commenting on some garbled quotations from FARM AND FIRESIDE, winds up by calling it an "agricultural anarchist." It seems to us that a respectable single tax advocate should be cautious about mentioning anarchists.

For, if we have not been misinformed, the great majority of anarchists and socialists are zealous single taxers. Of such is the kingdom-come of single tax. When the single tax theory fell among city anarchists it fell on congenial soil, took root rapidly and made rank growth.

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Our Farm.

AGRICULTURAL CHEMISTRY

From the Standpoint of the Practical Farmer.

BY JOSEPH (TUSCO GREINER).

[Conclusion.]



HEAPER NITROGEN.—The laws
of supply and demand some-
times influence the prices of
the raw materials of plant
foods somewhat differently
from what they do in regard
to prices of other commodi-
ties. In the first place, the supply of these
cheap raw materials is constant; that is,
unlimited. The nitrate beds of South
America, the phosphate rocks of the Caro-
linas, and probably Florida, and the pot-
ash mines of Stassfurt, are practically in-
exhaustible. The larger the demand, the
more can be mined, and the cheaper the
companies can sell, and the more competi-
tion there will be in dealers, all of
whom can afford to do business on a
smaller margin on account of the larger
trade. I do not say that it always works
that way, but it should. Often, however,
these dealers think they must make hay
while the sun shines. Certainly, with the
large amount of easily-mined and easily-
ground phosphatic rock found in Florida,
and with Thomas slag now manufactured
in the states and the increased consump-
tion, we should expect to get our phos-
phoric acid cheaper than heretofore. The
fact is, we can hardly get our manures
and manrial materials cheap enough
to enable us to use them as raw ma-
terials for the production of our common
farm crops. We need the nitrates from
South America, and the potash salts from
Germany, also, but we cannot afford to
pay an import duty on them, as is now
proposed to put on sulphate of potash.
We want these things cheap—the cheaper
the better.

The prices of phosphoric acid and pot-
ash have remained the same since I gave
the schedule of trade values adopted by
experiment stations for 1889. Nitrogen,
however, has become cheaper. The sched-
ule for 1890 is as follows:

Nitrogen in ammonia salts.....\$.17 pr. lb.
Nitrogen in nitrates......14½ pr. lb.
Organic nitrogen in dried and fine
ground fish, meat and blood.. .17 pr. lb.
Organic nitrogen in castor pom-
ace and cotton-seed meal..... .15 pr. lb.

Nitrate of soda, having 16 per cent ni-
trogen, would therefore be worth per ton
320x.14½=\$46.40. I see that a Baltimore
firm (W. S. Powell) offers it in 50-pound
sacks at 2½ cents per pound; in 100-pound
bags at 2¼ cents, and in the original
package (300-pound bags) at 2 cents per
pound. This is only \$40 per ton, and cer-

tainly the cheapest source of nitrogen yet
generally offered to those who desire to
use just that particular element of plant
foods.

SOIL TESTS.—"Individual farmers must
determine for themselves," says the New
Jersey Experiment Station, "whether for
their land and their crops single elements
may not be more profitable than any com-
bination of two or more." The physical
condition of the soil, and its previous
cropping and manuring, should also serve
as a guide. Yes, this whole matter is some-
what complicated, since every farm, and
perhaps every field or acre on that farm,
has its own peculiarities. These the
farmer must try to discover, and I know
of no better way than the constant and
careful test of single elements for various
crops. The paraphernalia needed are not
many nor expensive—a bag of nitrate of
soda (or sulphate of ammonia or both), as
source of nitrogen; a bag of dissolved
bone black as source of available phos-
phoric acid; a bag of muriate of potash (or
sulphate of potash or both) as source of
potash—that is all. Then use them alone,
in different combinations in small patches
on all crops, keeping a careful record, and
observe and note the results. This will
give you a better guide for future man-
agement than anything else you could do.
Should you find that the dissolved bone
(superphosphate) alone gives you a large
increase of crop, it shows you that the
land and crop need phosphoric acid. So,
another year you can apply the super-
phosphate, plain and simple, at a cost of
about \$24 per ton instead of a complete
fertilizer at \$40 or \$45 per ton. After-
wards, you may also try the floats, or the
Thomas slag, on a small scale, and com-
pare results with the superphosphate, etc.
It is the way I am doing myself—I keep
the material, unmixed, and apply them as
I find the soil and crops need them. But
if I find that all elements are needed, or I
am not quite sure of my ground, I apply
the complete high-grade fertilizers, pre-
ferably a special potato manure, which I
often (usually) apply to all my garden
vegetables.

It is true that "economical buying should
be accompanied by rational use." The
user of incomplete fertilizers and single
elements, of nitrates, potash and phos-
phoric acid, pure and simple, must know
what he is about, must understand the
needs of his soil and crop. If he does not,
his work will be like shooting at a target
in the dark, blindfolded. I have aimed,
in my articles, to tear the bandage off his
eyes, and show the target in the full glare
of daylight.

ON ADULTERATION OF FOOD.

BY H. A. WEBER.

The condition of our daily food is a
matter of general importance, since food
is the source of our mental and physical
powers. Health, happiness and morality
are intimately connected with our bodily
nourishment; hence, the adulteration of
commercial articles of food, which are in
constant demand for the support of
human life, becomes a matter of interest
to us all. This assertion would be true,
even if the adulteration of food were sim-
ply confined to the perpetration of fraud
upon the purchaser of the commodity.
But fraud is the least of the many evils
attached to this nefarious business.
Among the facts which we shall endeavor
to present on this subject, there will be
abundance of evidence to show that the
unscrupulous sophisticator of human
food, merely for the sake of advantage or
gain, will not shrink from employing
such means as endanger the health and
even the life of the consumer.

It is not our purpose to enter upon a
full discussion of the historical phases of
this subject, embracing the practice of
food adulteration in the past and the
means employed for its detection and
suppression, interesting and instructive
as it may be, but we will confine ourselves
to the presentation of such facts which
have come under our own observation, and
which affect us at the present time. Suf-
fice it to say in this connection, that the
sophistication of food and drink has been
practiced, more or less, from times im-
memorial, but it is the lot of our present
civilization to see it growing to such a

magnitude that it vitiates nearly every
class of prepared articles of food in the
market, to experience a condition of trade
so that an honest manufacturer of a pure
and genuine article of food could canvass a
whole city without soliciting a single
order for his goods, the dealers conceding
the superiority of the same but refusing
to handle them because there was more
money in adulterated goods; and to find
people of high standing in society and the
church openly engaged in this business,
regardless of the rights, health and happi-
ness of their fellow-citizens, and defending
their action with the flimsy excuse that
if they did not do it somebody else will,
or they must either do it or go out of the
business.

Several causes have combined to make
this condition of affairs possible in modern
times. 1. The universal competition of
manufacturers all over the the country,
in fact, all over the world, owing to the
facility, cheapness and rapidity of trans-
portation. 2. The ever-growing demand
of the consumer to obtain his food prod-
ucts partially or wholly prepared for the
table. 3. The perverted use of scientific
discoveries to the preparation of counter-
feits or imitations of well-known articles
of food. The highest scientific skill has
been employed for this purpose, and at a
salary which makes the humble searcher
for scientific truths feel insignificant in-
deed. The result of this employment of
scientific skill has been products which
so closely resemble the genuine that the
highest scientific skill is again required to
distinguish between them, thus verifying
the old adage: "It takes a rascal to catch a
rascal." These causes fully explain the
whole matter, and it is not necessary to
have recourse to the assumption that the
human race has grown worse.

The adulteration of food may be divided
into the following categories:

1. The sale of an article under a false
name; for example, oleomargarine for
natural butter; compound lard, manu-
factured out of tallow and cotton-seed oil,
for genuine lard; cotton-seed oil for
olive oil; skimmed milk cheese for full
cream cheese; distilled vinegar, made
from dilute alcohol and colored with
burned sugar or malt, for cider
or malt vinegar, or uncolored for
white wine vinegar; alum baking-powder
for cream of tartar baking-powder; a mix-
ture of water, sugar, tartaric acid and
orange oil for orange cider; artificially
flavored cane sugar sirup for maple sirup,
etc. 2. The addition of foreign substances
to an article of food, in order to increase
its weight or bulk for greater profit; for
example, water and skimmed milk to
milk; white clay and gypsum to candy;
ground mustard, etc.; gypsum to cream
of tartar; wheat flour to buckwheat flour,
ground mustard, etc.; corn meal, bran,
ground crackers, cocoanut shells, rice
hulls, rice flour, buckwheat flour, etc., to
white and black pepper; linseed meal and
red ochre to cayenne pepper; corn meal to
ginger; glucose to honey and maple sirup;
starch, sugar and starch to cane sugar;
starch, acid phosphate and alum to cream
of tartar; ground peas to cheese; roasted
peas and bread to ground coffee; foreign
fats to butter and lard; cotton-seed oil to
olive oil, etc. 3. The extraction of an im-
portant constituent from an article of food;
for example, the skimming of milk; re-
moving the butter fat in the manufacture
of cheese; the extraction of fat from choco-
late; the leaching of tea leaves; the extrac-
tion of ethereal oils from cloves, cinna-
mon, etc. 4. The addition of a foreign
substance to improve the taste or appear-
ance of an article of food that is poor,
spoiled or adulterated; for example, the
addition of alum or copper sulphate to
spoiled flour; the use of burned sugar or
similar coloring matter to restore the
original rich color of milk, which has been
watered or skimmed; the addition of bi-
carbonate of soda or powdered chalk to
milk or cream that has become sour; the
use of graphite, ferric oxide, Prussian
blue and turmeric to obscure the poor
quality of tea; the addition of venetian
red, red lead, sulphite of mercury and an-
nato to chocolate and cocoa to restore the
color destroyed by the adulteration with
chalk, gypsum, starch and sugar; the ad-
dition of lime to lard; the addition of cay-

enne pepper to highly adulterated, black
pepper in order to restore the sharp taste;
the use of red ochre to color cayenne
pepper which is highly adulterated with
linseed meal or corn meal; the coloring of
distilled vinegar to give it the appearance
of fruit or malt vinegar; the coloring of
mixtures of neutral lard, oleo and veget-
able oils, to give them the appearance of
creamery butter, etc. 5. The use of poi-
sonous colors; for example, red and yel-
low chromate of lead, carbonate of lead,
cinabar, red lead, carbonate and acetate of
copper, Brunswick green, aniline and
other coal-tar colors in colored sugar and
confectionery; copper salts in pickles and
canned vegetables; red lead in cayenne
pepper. 6. The employment of strong
antiseptics for the preservation of food
products; for example, borax and boric
acid in milk to make it keep sweet; in
pork and beef pickle to preserve the meat;
in grape juice and sweet cider to prevent
fermentation; salicylic acid in sweet cider;
in canned fruits and vegetables of all
kinds; in maple sirup; in preserves, jams,
jellies and catsups; in malt extract used
for medicinal purposes; in wine and im-
ported beer; saccharine in glucose sirups
to increase the sweetness; white arsenic
and sulphate of copper on the rind of
cheese to protect it against parasites, etc.

Each one of these groups of food adul-
terations may very naturally be discussed
in two directions; namely, in relation to
the fraud perpetrated upon the consumer
and to the effect upon public health.

The charge of fraud in those cases fall-
ing into the first category of adulterations
just given is very easily established. No
person can be accused of being overparticu-
lar if he should object to paying the
price of creamery butter, say 25 to 40 cents
a pound, for an article which is sold to
him with the assurance that it is genuine
butter, but which in reality is only
an imitation or a counterfeit, costing in
the raw state from 2 to 5 cents a pound,
and wrought into the semblance of butter
by a comparatively inexpensive process of
manufacture. Chicago flats (skimmed milk
cheese) have sold in the market, at whole-
sale, for 6, 4 and even 2 cents a pound, as
the necessities of the case required, and
have been retailed to the consumer at the
price of full cream cheese. Distilled vine-
gar, colored to deceive and costing the
manufacturer not more than 3 cents a gal-
lon, exclusive of packages, has been
falsely branded and openly sold all over
the country for pure cider vinegar at the
retail price of cider vinegar, so utterly
paralyzing the sale of genuine cider vine-
gar that millions of bushels of apples,
annually, were allowed to go to waste in
this state alone. The average price of
cream of tartar used in baking-powder is
35 cents a pound; alum costs 2 cents.
Comment is unnecessary. Orange cider,
which a few years ago sailed under false
colors as a clarified juice of California
and Florida oranges, cost the manufac-
turer not to exceed 16 cents a gallon, and
retailed at \$2.50 a gallon. Owing to the
great profit in the business, the manu-
facture and sale of this article reached
immense proportions in a comparatively
short space of time. One of the first acts
of the state dairy and food commission
was to puncture this bubble, when it col-
lapsed as speedily as it had risen.

The second point of this discussion—that
is, the relation of this class of adultera-
tions to the health of the consumer, can-
not be shown in so clear a light. In fact,
the opinions of scientific men and other
disinterested persons differ widely on this
question, those who regard the use of
these foods with suspicion being sadly in
the minority. Under these conditions, it
is not to be wondered at that parties in-
terested in the manufacture and sale of
these commodities fail to see any harm in
their use whatever.

Are artificial orange and apple cider,
wine, vinegar, circus lemonade, etc., as
nutritious and wholesome as the natural
products for which they are fraudulently
sold? Such questions the advocate of
pure food is called upon to answer more
frequently than any others, and his pre-
sumed inability to answer them in a sat-
isfactory manner is implied in the eager-
ness and spirit of assurance with which
his opponent puts them. There are sev-

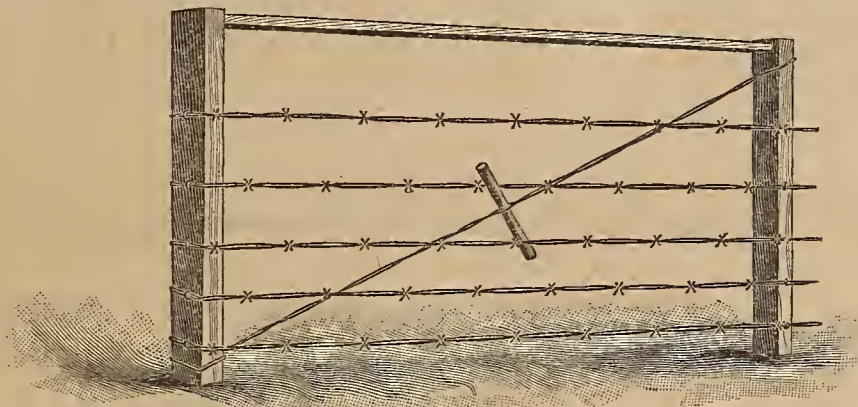
eral good reasons, however, for answering these questions in the negative. In the first place, the spirituous articles are all deficient in those mineral substances which are essential to animal life, and which the genuine products always contain. To illustrate the important part which the mineral or ash ingredients play in animal nutrition, let us suppose that the solid food of a person should consist of pure protein, as gelatine, albumen, or washed muscular fibre, of pure carbohydrates, as starch or sugar, and of pure fat, as butter fat, all of which can thus be prepared. If with a ration consisting of this material he should use a sufficient quantity of the genuine liquors mentioned above, the process of nutrition would remain unimpaired for an indefinite length of time, but if the spurious articles should be substituted for the genuine, although the solid part of his food remained the same, he would starve to death as surely and as speedily as if he had partaken of no food whatever. Again, the whole series of organic acids, which we consume in our vinegars, fruits and vegetables and in various articles prepared from fruits, and which are so necessary to health, especially in our debilitating climate, act as irritants and even as irritant poisons, in some cases, when they are taken into the stomach in a pure state or simply in solution in water. But in the presence of the other compounds which always occur in fruits, vegetables and in all kinds of products prepared from them, this irritant effect upon the mucous membrane is so highly modified that immense quantities of these acids may be consumed with impunity. For this reason, distilled vinegar, which is nothing but water containing 3 to 5 per cent of acetic acid, is not so desirable and wholesome as cider vinegar, which contains in addition 2 to 4 per cent of extractive matter. So, also, all imitations of natural beverages prepared by the use of chemicals should be regarded with distrust before being taken.

The subject of alum in food is one in which the American people are especially interested, on account of the immense quantities of alum baking-powders consumed in this country. That alum itself, when taken in the same amounts as in the use of alum baking-powders, is injurious to health, is conceded by all. This opinion is based upon the well-known astringent properties of the drug. It precipitates and renders inert highly organized organic matter, and thus interferes directly with the process of digestion. Those who advocate the use of alum in baking-powders base their opinions upon two assumptions, both of which we hold to be erroneous. In the first place, they claim that the alum is decomposed when the baking-powder is moistened with water, as is done in the mixing of dough, aluminium hydroxide being formed, which, on subsequent baking of the bread or cake, is changed into the oxide, a compound utterly insoluble and therefore inert and innocuous. The first part of this assertion is true. The sole use of alum in baking-powder depends upon its ability to decompose sodium bicarbonate and thus to evolve carbonic acid gas, which leavens the bread. But the falsity of the second part of the claim, that the aluminium hydroxide is rendered insoluble and inert, is evident, not only to those who may have a right to judge from a full knowledge of the subject, but even to such disinterested persons who may have been satisfied with an occasional "pleasure walk along the border of science." The conversion of aluminium hydroxide into the oxide requires a red heat and a dry surrounding atmosphere. To claim that this takes place in bread, which has been heated to a temperature that does not exceed much, if at all, the boiling point of water, and which is steaming with moisture when it is taken from the oven, is too absurd to deserve a moment's serious consideration. It does not necessarily follow that the alum contained in a given baking-powder is all decomposed; but granting this to be the case, we see that it must be contained in the bread in the form of aluminium hydroxide. This compound is in itself a mild astringent. But not only this; it is readily soluble in dilute acids, and consequently in the gastric juice, and must therefore have the same effect upon the

process of digestion as alum or any other soluble aluminium salt. From this it will be seen that any objection made to the use of alum in our daily food must obtain in an equal degree to alum baking-powder.

The friends of alum baking-powder claim further, that the amount of alum introduced into the food by the use of this article is too small to deserve attention in a sanitary point of view. This may be true for single doses of the drug, but it surely does not follow that for this reason these doses remain harmless when repeated two or three times a day for a number of days or weeks in succession. The danger is greatly increased from the fact that there is no control for the amount of the powder to be used in food. The proportion usually prescribed, two teaspoonfuls to the quart of flour, may easily be doubled or trebled, according to the fancy of the cook, or owing to the deterioration of the powder. It may be well to call attention to the fact that aluminium compounds do not occur in the sources of human food provided by nature.

One of the most vexed questions with which the court of public opinion has to deal at the present time, is the case of oleomargarine versus butter. Each kind of butter has its friends and enemies, and they are by no means confined to the producers of and dealers in the respective commodities. The most ardent admirers of oleomargarine, for instance, are to be found among scientists of the highest standing. In view of this fact, it might be considered presumptuous on our part to enter the lists in defense of the meek and much abused dairy cow against the encroachments of another quadruped, which is gradually rooting her from the proud position that she has occupied among



WIRE FENCE BRACE.

domestic animals, as the exclusive source of a wholesome and delicious article of food for man. But the question is before the American people to-day, as it has been or will be before every other civilized nation of the earth, and the least we can do is to present the merits of the case as fairly and truthfully as possible, and then draw our own conclusions.

[Continued in next issue.]

PECULIARITIES OF POTATOES.

Here in New England, where the average yield of potatoes probably does not reach 100 bushels per acre, and where 200 bushels is considered a good yield and 400 a stupendous one, the story of 1,000 bushels per acre, as reported by the prize-takers, seems like fiction.

Last season I planted and cultivated my potatoes in accordance with the improved method; namely, plowed in a good dressing of stable manure, planted in drills in deep furrows, using cuttings with two or three eyes, covered lightly. I sifted a dressing of high-grade superphosphate over this, then another slight covering. The potatoes came up well, and received thorough cultivation throughout the season, but the result did not show much increase of yield, while the labor of digging was increased. Still, I intend to adopt the same method of planting this season, being satisfied that the quality is improved, inasmuch as potatoes near the surface are more liable to be scabby, sun-burnt and rotten.

The absence of balls on potato vines is ascribed by many to potato beetles, or the injurious effects of Paris green; but my experience the past season has shaken my faith in that theory. In the spring of 1887 there was a scarcity of potatoes, and our supply was obtained principally from

Nova Scotia and Scotland. Late in the season I purchased some for table use that were grown in the former place. They proved to be very good, and I concluded to try and preserve the seed by planting two or three hills. The frost killed the vines before the tubers were half grown. To my surprise, these potatoes produced balls. The tubers were carefully preserved and planted last season. The product was nearly a barrel of good-sized, smooth, handsome potatoes and four quarts of potato balls. It is a late variety, color light, with some dark spots, eyes somewhat sunken, shape a trifle longer than the Beauty of Hebron; the tops resembled those grown here fifty years ago, more than the modern varieties.

Brooks' Seedling and Beauty of Hebron were planted by the side of them, and received the same treatment. The seedlings were very scabby, while the new variety was entirely free from it. It was more productive, with a larger per cent of salable potatoes. Why was the difference in regard to scab? Why is it that this variety of potatoes will produce seed, while most other kinds do not?

Massachusetts.

WM. C. LITTLE.

WIRE FENCE BRACE.

Mr. J. J. Munday, South Dakota, sends a description of a brace for a wire fence. The posts are eight feet apart. The cross-piece is 2x4 inches, eight feet four inches long, fitted in notches on the posts. A smooth wire passes around the base of the end post and the top of the next post. The stick is twisted tight enough to hold the second post against the brace.

THE WORK-SHOP.

On the farm there is nothing better than a good work-shop; not some old, tumble-down, abandoned shed, or what is worse yet, a poor excuse for a work-bench set up

up to dry until spring. Then it should be placed in a tight box, so as to exclude the borers, or they will soon ruin your timber. Set your boards up edgewise, so that you can easily get at the board you are in need of.

I have been observing the trend of action of the farmer boys of late years, and must say there is nothing more dangerous to their character and future worth than the squandering of so much valuable time on the roads and loafing around towns. No one is so much to blame for this as the father. If the father had a good shop at home where they could be taught to work and do all of the building and repairing, putting up nice fences around the home, painting them and all buildings needing it, the boys would have something to do that would be of solid worth to them and would teach them to take more interest in their homes.

Between study and work there is no time to squander on the farm. Don't give the boys a horse and buggy. Teach them to improve their time at home, and don't be mean with them; give them good tools to work with. Have a good way to ride out, and if you have raised your boys right, you can always afford to take your wife and family anywhere where there is anything instructive.

Springboro, Ohio.

A. G.

HINTS ON HORSESHOEING.

Never fit the foot to the shoe, but fit the shoe to the foot.

Never put a hot shoe to the hoof; many good hoofs have been ruined by burning.

Never pare the frog.

Never twist off the nails; use nippers for cutting them off.

Never drive large nails.

Never drive the nails too high in the wall of the hoof.

Never trim the hoof more than is necessary.

The art of shoeing is important and should be understood by the owner of the horse. More good hoofs have been spoiled by hot shoes than in any other way.

Burning stops up the pores of the hoof wall and makes it brittle and the horse tender footed.

D. E. ASHER.

Indiana.

MEETING OF OHIO STATE HORTICULTURAL SOCIETY.

The Ohio State Horticultural Society will hold a summer meeting at the experiment station at Columbus, June 11th and 12th. Reduced railroad rates. A large attendance and an interesting meeting are desired and expected. All horticulturists are cordially invited. Several county horticultural societies expect to attend in a body. Write to the secretary for programme. Members of the society will receive one without writing. W. W. Farnsworth, secretary, Waterville, Ohio.

150,000 NEW FARMS A YEAR.

The census of 1880 showed that in every year since 1870 there had been opened in the United States on an average upwards of 150,000 new farms per year. This fact explained the mystery, for even to some of the manufacturers themselves it seemed a mystery as to where all the new self-binders and mowers went to. William Deering & Co., of Chicago, alone manufacture between twenty and thirty thousand complete self-binders and as many mowers every year, and with reapers and various other implements and attachments their product runs up to many thousands. Of course as they stand at the head the product of other works is smaller, but in the aggregate it takes many new farms to make places for all.

AMARILLO, TEXAS, March 4, 1890.

The Atlas is at hand. It is the most complete and valuable work of its kind that I have seen. I would not take five dollars for it.

C. M. HAYHURST.

NEW HARTFORD, N. Y., March 12, 1890.

The Peerless Atlas arrived in good order. We think it is just as good as one we should have to pay eight or ten dollars for.

MRS. S. A. DURRANT.

ARCADIA, NEB., March 7, 1890.

I received the Peerless Atlas and the picture, "Christ Before Pilate," and am well pleased with both. Was offered a dollar for the atlas, and my father, who is an old teacher, says it is the best atlas he ever saw.

CLARA F. EASTERBROOK.

Read our Grand Offer of the Peerless Atlas, Farm and Fireside, and the Ladies Home Companion, all for only \$1. See page 291.

Our Farm.

FARM AND GARDEN NOTES.

BY JOSEPH.



THE CABBAGE MAGGOT.—Lime-water, pretty strong and caustic, is probably the safest and most certain remedy for the cabbage maggot. Where the plant beds are suspected to be subject to the attacks of the cabbage fly, such lime-water should be applied freely and repeatedly to the stems of the plants, allowing it to soak into the soil. This will dispose of the eggs laid on the stalks near the ground, as well as of the maggots that may have developed before the application was made.

A MIXED BUSINESS.—A "seedsman" in New York state has made a specialty of introducing novelties, and he sends out a double sheet, richly illustrated, setting forth the good qualities of the varieties he offers. He has been advertising quite liberally, and to any one who answers his advertisements he forwards, not only this sheet, but also a lot of circulars offering trashy literature of a sensational character, such as the "Life of Jesse James," etc., also a wonderful patent (quack) medicine. My advice is, let the man and his goods severely alone. The mere introduction of such circulars, not to speak of the introduction of the literature advertised and described in them (boys and girls are easily induced to send for such stuff to gratify their curiosity), is a stain on the purity of the house; and as for the seeds of novelties, etc., we have every reason to suspect that their value is on par with the other goods advertised; namely, of extremely low order. There are plenty of respectable seedsmen you can patronize, and he well served.

CORN ENEMIES.—A correspondent from Oregon some time ago asked me concerning a "worm" which infests the kernels of corn. In this latitude I have never had any trouble with insects depredating on the grain of corn, but the people of states south of New York state have every year a large share of the ears of their early sweet corn befouled, partly eaten, and entirely made unfit for table use by the corn or boll worm. There it is a common pest, the parent, a moth, being double-brooded. The first brood attacks the earliest corn, and the second brood goes for the late crop, so that the intermediate varieties usually escape altogether. There is really very little that can be done for this pest except keeping close watch over the patch of early corn, picking off and destroying the worms as soon as their presence is detected. This treatment, of course, will greatly diminish the second brood.

The other corn kernel eater, which gives much trouble to corn growers at the South, is the Calandra oryzae, or rice weevil, commonly called "black weevil." It is especially fond of rice, but also attacks wheat and corn. The perfect insect, a long-snouted beetle, bores a hole in the grain and drops in it a single egg, going from one grain to another. The eggs hatch and the grubs begin to eat out a nice little cavity for themselves, the kernel serving them both as a snug residence and as food. When full grown they gnaw their way out, leaving the door carefully closed again after them. The point of exit is stopped up by them with particles of flour. In spring the perfect beetles emerge from the grain.

The remedies to be suggested for this pest are exactly the same as those recommended for the bean and pea weevil—gather the seed corn carefully, and either expose for some time to 140 or 150 degrees Fahrenheit, or place it in a tight bag, box or barrel, with a little buhach mixed in with it, or expose in such closed receptacle to the vapors of bisulphide of carbon or spirits turpentine. Exposure to a temperature below zero for a little while is also sure to kill these grubs, which probably is the reason that we at the North need not be in much fear of this corn weevil.

SEEDLING POTATOES.—A subscriber asks me to tell how they are grown from the seed of the seed-hall. This is a simple matter. The seed grows as readily as cabbage seed, although at first more feebly. It may be sown in hot-bed or cold-frame, or even in open ground, later in the season, if pains are taken to prevent injury from bugs. The seedlings transplant easily. If preferred, they may be potted off in thumb-pots, or set in boxes three inches apart each way, or they may be set directly in open ground. When danger from late freezing is past, set the young plants in well-prepared ground, in rows say two or two and one half feet apart, and fifteen or eighteen inches apart in the rows. Now comes the dangerous period in their existence—the period of bug attacks. The potato beetles are very fond of the young and tender foliage, and as there is so little of it, they would soon make an end to the plantation if allowed access to it. Applications of Paris green in any form would do more harm than good. The foliage is too tender to stand much poison, and it would not prevent the beetles from eating leaf and stalk down to the ground. So we have really only one means of saving the plants, and that is by covering with a tent of cheap muslin or mosquito netting. After the plants have made considerable growth, however, this can be removed, and the plants, if necessary, protected from further molestation by applications of Paris green mixture. Harvest the crop in autumn, putting each hill by itself in a paper bag, straw-hay-basket, or similar receptacle, and keep in a cool room until planting time the following spring. Then plant each variety by itself in the same way as you plant other potatoes. I prefer to plant the tubers whole, one and one half feet apart in three-foot rows, and keep good watch of them to see the "good points." The probabilities are, that you will desire to discard most of the varieties in the fall. Preserve the most promising sorts, again each by itself, and plant in the same way the year following. Weed out the poor varieties, keep on planting and weeding out, and perhaps you may get some passable sorts in the end.

Orchard and Small Fruits.

CONDUCTED BY SAMUEL B. GREEN.

CORRESPONDENCE.

GRAPE ROT.—In 1888 I obtained about 7,000 pounds of fine grapes from my vineyard of one acre. Some of my vines are 1 1/4 inches in diameter. In February, 1889, I trimmed them as usual, and gave them a thorough working the last of April. The vines grew rapidly and well until the grapes were as large as shot, then I clipped the ends of the bearing vines. About the 31st of May I noticed an occasional brown speck on the berries, but was not surprised, as this had been the case every year. But I was surprised to find one half of my grapes ruined the 2d of June, and over three fourths on the 3d, when it stopped as suddenly as it commenced. I now have my vines all trimmed. Some of the varieties on which all the fruit rotted made the rankest growth. I came to the conclusion that I had too much root for my top, and so with a side harrow I crossed my rows, running seven inches deep in top of ridge, and lifting to middle, which leaves it nearly level in the cross. I loosened a great many roots. I shall leave some without cross harrowing. When my vines are all tied up I think of running a harrow very lightly through the rows, and wait until weeds come to cultivate.

Now, then (unless you think I have done enough to kill my vines already), can I use sulphate of iron as a wash on them now, and then use the copper later without injury? I find a great deal of loose bark on the vines. Would it injure them to remove this before washing, or at all? I am experimenting, and ready for suggestions from any source as to what I have done or what I ought to do under the circumstances.

Arkansas.

J. A. HENDRICK.

[I don't admire your plan of tearing off the roots of your vines, and think it was an experiment without good reason, and will not affect the rot at all, unless it weakens the vines and leaves them more subject to disease. The disease stopped suddenly probably because of a change in weather. I think it would be a good plan to remove the loose bark and burn it, together with all the trimmings, and then wash the vines with sulphate of copper, and use Bordeaux mixture during the summer. Remember, that the rot must be held in check by prevention, and cannot be stopped when once it has secured a lodgment on the fruit. If the fruit is bagged early, the rot will not attack it.—S. B. G.]

INQUIRIES ANSWERED.

BY SAMUEL B. GREEN.

Suckers.—C. L. N., Williamsburg, Md., asks: "What condition of the tree does it indicate, when suckers and shoots come up from the roots? Is there anything to prevent them?"

REPLY:—Some trees naturally sucker a great deal, while others only sucker when the tree itself is injured. The root of our northern plums, of which the Weaver is a type, sucker very freely whenever the roots are cut, as with a plow, etc., but they do not sucker much otherwise. Again, the Maroholan plum stock suckers comparatively little. Therefore, you will see that I cannot answer your question definitely unless I have the particulars of the case.

To Keep Ants off Trees.—J. M. W., Brant, Mich., asks: "What will prevent ants from going up in the cherry trees?"

REPLY:—The trees could have a band of tar paper wrapped around their trunks, and this could be kept covered with soft coal tar

or tree ink. The latter is used largely in the same way to keep the canker worms out of the trees where they are troublesome.

Cheap Plants.—W. F., Paradise Valley, Pa., writes: "You say that berry bushes can be bought for two cents each, and strawberry plants for one cent each. Where can I get them so cheap?"

REPLY:—You will find that berry bushes can be bought at the prices stated from almost any of the nurserymen advertising in this paper. That is, such or less would be the prices for standard kinds. Some of the newer kinds are held at higher prices, but they are as yet untried.

Bone Meal for Apple Trees.—J. D. K., Jr., W. Va. Bone meal is one of the best fertilizers for fruit trees. It should be applied broadcast over the surface of the ground covered by the branches, in the spring. It should never be applied in the latter part of the summer, for it would then have a tendency to cause a late growth. About eight pounds should be applied to large, old apple trees, and small trees should be treated proportionately. To protect from borers, wrap the butts with paper or mosquito netting, or cover with a white-wash made of plaster of Paris and water, to which one per cent of Paris green has been added.

Holes in Trees.—A. B. L., Bartos, Pa., writes: "As I was trimming my apple trees, I found that some of them were bored full of holes from one eighth to one fourth of an inch in diameter. The holes were merely through the bark, from one fourth to one half of an inch apart in circles around the trees and limbs as far as the rough bark extends, and the circles being from three to six inches apart. Some of my trees were also full of small, black lice, similar to midges."

REPLY:—I think the holes you refer to in your trees were made by a woodpecker of some sort, and cause no harmful effect. Do not understand about the lice, but all such insects may be destroyed by use of the kerosene emulsion, a recipe for which was given recently in these columns.

Remedy for Currant Worms.—H. M., Tooele City, Utah, writes: "I should like to know what time of the year to apply hellebore, and if it is necessary to apply it more than once to kill the currant worm; also, if you know of anything better than hellebore for destroying this insect?"

REPLY:—White hellebore should be applied to the foliage of currant bushes as soon as the first worms appear. It is generally necessary to make one quite thorough application when the worms first appear, and then to follow with a rather light application when the worms are seen later in the places missed at first. The kerosene emulsion recommended in these columns lately is most excellent for this purpose and is not poisonous.

Training Grape Vines.—G. G., Dalton, Ga., writes: "My vines are at present growing to a post, and next year I would like to trellis them. (1.) Would it be well to leave a couple of buds growing near the ground—say 18 inches from it—the nearest branch now being about two feet and in some cases more? (2.) Does it hurt the vine to pinch off buds and small branches where they crowd on bunches of fruit where they are too thick? (3.) Can I cut off (next winter) any wood where it joins the parent stem?"

REPLY:—(1.) It would be all right to do so. (2.) It is most desirable to pinch out, when young, any superfluous growth and to stop the laterals three joints beyond the last bunch. But a large quantity of foliage should never be removed at one time, for whatever reduces the amount of foliage reduces or checks growth. Pruning should be done solely to direct the growth, and it is always best to remove any useless cane before it has made much growth, or perhaps when only a bud. (3.) You can cut off next the stems if after so doing you leave a bud to start growth.

Grafting Wax—Solution for Spraying Trees.—C. W., Vanderbilt, Mich. A very good grafting wax is made as follows: Melt together 1 part beeswax, 3 parts rosin and 2 parts tallow. The mixture should be pulled as molasses candy is pulled, to give it toughness. If too hard, add more tallow. If too soft, add more rosin. In cool weather, when using it, keep in slightly warmed water. A good wax may be bought of the seedsmen and dealers in garden supplies. I do not know what worms you refer to as being so very destructive, but for all insects that eat the foliage or fruit, such as causer worms, Paris green may be used with success. This should be applied in water at the rate of one hundred gallons of water to one pound of Paris green. The foliage should be sprayed with mixture, and if no rain follows for several days it will be effective. If a rain follows shortly after the application is made, it should be repeated.

Mulching Orchards.—C. L. N., Williamsburg, Md., writes: "I have a small apple orchard, six or seven years old. Has been manured and cultivated in some hoed crop every year, and is thrifty and vigorous. I do not intend to crop it more than one or two years more. Which would be the best treatment, to manure and plow it, thoroughly cultivating the trees; or keep the ground completely mulched with coarse manure, straw, forest leaves, sawdust, etc., and never plow or work it? If the latter method were employed, would not the roots grow so near the top of the ground that any future plowing would injure it?"

REPLY:—The best mulch for an orchard is a loose top soil. If an orchard is heavily mulched the roots are very liable to come to the surface, and be injured if the mulch is removed. Then, it is very apt to stimulate a late fall growth, which is not advantageous. I would recommend that you grow some such crop as corn or early potatoes in your orchard. Such crops do not necessitate the working of the soil late in the fall, which is to be avoided.

HOW I GOT TO COLORADO.

Having read in several papers that they were giving away lots at Montrose, Colorado, I wrote, and received the deed so promptly that a large number of my friends at once sent, and after getting their deeds, they appointed me a delegate to visit Montrose; through the courtesy of the Colorado Homestead and Improvement Co., I got a free ticket there and back. I had a lovely trip, and while there sold my lot for \$127.50. Any person can get one lot absolutely free, by addressing the Colorado Homestead and Improvement Co., Montrose, Colorado. By giving every third lot, they will bring thousands of people there. Montrose, the county seat, is a railroad junction, and a beautiful city of nearly 3,000, and will have ten thousand within a year. Their motto is "Get There, Boys," and certainly free lots and free tickets are sure winners. When property can be obtained free, why should not everyone own real estate?

S. S. N., Elizabeth, N. J.

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EXTRACTS
FROM CORRESPONDENCE.

FROM OHIO.—Farm land around here is worth from \$50 to \$60 per acre. Good clover hay is worth \$5 a ton, corn, 25 cents a bushel, and wheat, 80 cents per bushel. This is a good fruit country. My father has 100 bearing plum trees and 400 plum trees set out last spring; some of the trees bear two to three bushels each. Plums sell for \$2 a bushel. We have good gravel roads. We have 400 sugar trees and made 67 gallons of molasses in two weeks. W. C. M.

Delaware, Ohio.

FROM VIRGINIA.—Botetourt county, lying along the base of the Blue Ridge mountains, is one of the finest in the state. The lands generally are in a good state of cultivation. Stock raising is carried on quite extensively. There is the finest of timber, consisting of black, red and white oaks, hickory, walnut and ash. There is no better water-power in the South than in this county. The noble James river courses its way through it, furnishing unlimited facilities for manufacturing purposes. Our good time has just begun. We are now entering a new era of prosperity. Rolling mills, flouring mills, canning factories, wood-working plants and hundreds of other such industries are being established. Lands are worth from \$5 to \$50 per acre. E. C. O.

Old Hickory, Va.

FROM SOUTH DAKOTA.—Our country is nearly level, with but few streams of running water. It is covered with a good growth of grasses, such as buffalo, blue stem, slough grass, bunch grass and three or four other kinds. It is an excellent grazing country. Hogs do well; there has never been any disease amongst them. Last year was so dry that crops of all kinds were nearly a failure in many localities, which makes it very hard times for the poorer class of people. Many cannot farm this year on account of having no seed grain or feed, which makes many dissatisfied with the country and has caused many failures in business, and depreciated land one half. Good land can be had for \$300 to \$1,000 per quarter section, which, in a good season, will produce from 10 to 20 bushels of wheat, 20 to 35 of corn, 25 to 40 of oats, 20 to 36 of barley or 15 to 22 of rye. Our winters are quite cold, with some severe storms, but not so bad as it has been represented. The thermometer was 20° below zero at times last winter, but when it is so cold it is always very still, so that it seems as if the thermometer is lying about it. Our blizzards are grossly exaggerated.

Mount Vernon, S. Dak.

J. A. C.

FROM GEORGIA.—Laurens county is the most northern of the "wire grass" section of the state. It is noted for its fertile, easily cultivated, gray soil, its health and good, freestone water. The long-leaf pines are the wealth of its forests. These are not unfrequently of sufficient size to square thirty-six inches, and have four twenty feet logs, of course, diminishing in size. There is but very little undergrowth, and these undulating lands, covered with the wire grass, remind one of the descriptions of European parks. There are all kinds of hard woods, oaks, elms, hickory, walnut, gums, magnolia, dogwood, persimmons, holly, cypress, etc., in the hammocks and along the creeks and rivers. The yields of turpentine and rosin and lumber are immense. Railroads are being constructed through these pine forests and form a network on the map of the state. Unimproved lands sell from \$3 to \$10 per acre, improved from \$5 to \$15. There is a very fine opening for small industries working up the wood, and also for a barrel factory to supply the turpentine and rosin demand. McL.

Dublin, Ga.

FROM FLORIDA.—The opinion of Chauncey N. Depew that a ten-acre orange grove in Florida, properly located and attended, will yield more than a hundred-acre farm North, is well taken, and will be borne out by an examination into the facts. Furthermore, the surety of a crop is another consideration that should not be lost sight of. We understand that some groves in Florida have not missed a fair crop for seventeen years. In the North a peach crop once in four years is all that is expected. There is seldom an apple crop two years in succession. A wheat crop is a failure every third year. Small fruits are not only unreliable, but unprofitable when abundant, because the regions from Florida to Georgia supply the market from March to the time of perfection in the North, and the minimum price only can be obtained by the grower. Hence, the attention of many is being turned to the only state in the Union where winter gardening can be conducted with reasonable immunity from frosts, after the first of February, that is accessible to the northern market. One great lack up to the present time has been the excessive cost of fertilizers. The recent discoveries of inexhaustible beds of phosphate rock in a measure meet this want, the discovery coming just at the time, as usual, when the region is ripe to utilize it, and the probabilities are that some of it is of such a character that it can be made available for plant food without treat-

ment by acids. If so, large applications can be afforded, trusting to the carbonic acid in the soil to annually make soluble a sufficient quantity available for plant food to meet the demand. This will open a field for the trucker and gardener on a scale not before attempted, and require additional transportation facilities, new railroads, additional capital and increased prosperity generally. Florida, like all new states, has had great obstacles to contend with, and there are many discouraged small farmers and orange growers who cannot wait until their groves become remunerative and will sell out at a loss. Hence, there has never been a time when such opportunities were offered for investments to men with small capital, who are able and willing to work, and to wait without discouragement a reasonable time. An unequalled climate, and a region free from floods, cyclones, tornadoes, with a fair prospect for competence, invites the emigrant. G. W. H.

Interlachen, Fla.

FROM PENNSYLVANIA.—Union county is certainly as good a county for farming as any in the state. The soil is easily cultivated. The principal crops are wheat, oats and corn, which rarely fail. Small quantities of rye and buckwheat are also raised. The potato crop was a failure, owing to wet weather. Wheat is worth 85, oats, 30, corn, 45, potatoes, 60 cents per bushel. The yield of grain per acre throughout the county is as follows: Wheat, 25 bushels, oats, 35, corn, 80. We have good horses and cattle here. Good horses sell from \$100 to \$150; cows for \$25 to \$45. A small portion of this county is mountainous. There is plenty of good timber, such as chestnut, hickory, ash, pine and different kinds of oak. Saw-mills are scattered along the mountains. Wild game is plenty, such as deer, black bear, rabbits, foxes, raccoons, turkeys, pheasants, etc. This section of the county is thickly settled with peaceable and industrious people. There is no demand for help; wages are fair, from \$12 to \$20 per month and board, for farm work; wood choppers, \$1.25 to \$1.50 per day and board. We have good churches of all denominations, with many able ministers. Our schools are good, yet there is ample room for better teachers.

New Columbia, Pa.

W. D.

FROM OREGON.—We have disadvantages here, but no more than they have in other newly settled countries. In the towns they have good schools and churches; in the farming districts they do not have that advantage, but when the country becomes more thickly settled it will be different. The farmers are poor, from the fact that as this was a new country and had to be opened up and the soil rotted before sowing, it made the farmers hustle to make both ends meet, but now that they have got a start, they will be more comfortable. When every quarter section of land has a family on it and the land well tilled, the times will be more prosperous here. Farmers can turn over the bunch grass in the spring and sow grain on it in the fall. There is not much wild hay here; farmers usually sow oats, wheat and spring barley, and cut it in a green state for hay. There is good pasture, generally, in the mountains. Sheepmen take their sheep there during the summer months. On account of the cold springs of water in the mountains it would be a good place for a dairy. The timber here is principally pine, fir and tamarack. The hills are very green, affording good pasture for stock. The grass here is very nutritious in open winters; stock live on the range without any other feed. A. A.

Eightmile, Oreg.

FLORIDA.—The past has been, in many respects, the most remarkable and trying year ever yet known by Florida farmers and fruit growers. A protracted drouth set in during October; a winter of almost continuous summer temperature, starting trees and vegetables into vigorous growth, wound up during the first half of March in two disastrous frosts, which have done incalculable damage in many sections, while others have escaped in full all bad effects. But our state is on the greatest tide of prosperity it has ever known, and even the frost fails to dampen the ardor of the enthusiasts and speculators and capitalists who are flocking into our midst on every train. The only thing I can compare it to is the days of Pike's Peak and Black Hills excitement in the West, where I saw men risk their all in the effort to "get there first." Here it is not gold (although gold has been found in the general search), but it is phosphate, the mineral so called, that forms the basis of our commercial fertilizers. There are numerous United States homestead tracts of land containing fine beds of this material yet to be had in Florida, and I have recently entered 160 acres myself. The first cost of such a transaction is just \$14, a little less than ten cents an acre, and I expect the land some day to be worth \$1,000 an acre. Mr. J. Brower, from Illinois, entered a homestead on these terms about eight years ago, and recently sold 100 acres for \$13,000. Many other instances similar to this are known to be true. Our people are coming to the conclusion, with far greater unanimity than ever before, that regular, systematic farming is the best paying thing the land owner can engage in here in Florida. Fruit growing, particularly

orange growing, may be a very nice thing for the capitalist and the northern winter resident here, but the exclusive fruit grower, who has to buy all his supplies for man and beast, and pay cash for them (with big interest if he gets credit of the merchant), has but a small margin of profit in the end to fall back on. One of my neighbors—yes, several of them—who have been depending solely on fruit growing for some years, and who have believed that with the high prices to be realized for fruits—peaches, grapes, plums, pears, Japan persimmons, etc., in addition to the orange—they could make money enough to abandon farming, have decided to go back to growing crops again. The fruit will do well for a cash crop, and it does pay well, but the grower should come as near as possible to raising his own stock feed, bread, vegetables, butter, milk and meat. This he can do if he will. W. W. B.

Waldo, Fla.

FROM CALIFORNIA.—San Diego is in the south-west corner of both the United States and California, on the beautiful harbor of San Diego. The best of this place is its climate, and the worst is the dry summers. In summer one can see high mountains many miles eastward. One of these, "Old Baldy," has everlasting snow on its top. All around where no one has cultivated the ground, in summer it is brown and dry. Some people boast they raise fruit, vegetables, etc., without water, but they could raise them much better with water. It would be hard to say what we cannot raise if we give it proper care. Think of everything raised in New York on one hand, and in Florida on the other, and you will have thought of the things we can and do raise here in San Diego county. Some people seem to think when our winter rains come it is nothing but rain, rain all the time. As it really is, our winter rains and mud are no worse than New York rains and mud. To some minds it is too warm in the sunshine. If one keeps in the shade it is far more delightful than in other states. We have disagreeable weather sometimes, but far less than any other state. As the state is the best of the United States, so San Diego is the best of California. The winds blow too hard, sometimes. I know of no pests except rats, mice, gophers and rabbits, and some fleas on cats or dogs, and a few ticks. In the unsettled country the ground is riddled with gopher and rabbit holes. When one builds and settles there they are troubled by the gophers and rabbits eating the roots of trees, grape vines, etc. With traps and cats or dogs they destroy them. The winter rains sometimes drown them out. The birds scratch up the newly-sown seeds and pick the new fruit buds. There are some small, but numerous, worms that eat all kinds of vegetables, and we have to look out and kill them with insect powder, or catch them and "punch their heads." They are caught easily, as they drop and curl up when touched. Sometimes, early in the day, and sometimes all day, the sea fogs cover the city, but as that happens in every seaport it cannot be called a trouble. We must put up with that. The others we can prevent or lessen. When the snow is on the mountains eastward, the wind blows the cold air down and it is cold enough for fires. We have a very light, harmless frost in early winter mornings. The principal

streets in this city are paved. Trade is very dull now; it would be much better if there were not so many stores of the same kind. There are also, to my mind, too many saloons. It is easy to enter our beautiful, blue harbor. The depth over the bar at low tide is twenty-three feet. The harbor is almost perfectly safe. When the winds are brisker than usual the small yachts sometimes break away and run ashore. At times when there are storms up the coast, the swells roll heavily down here, and the bay is full of white caps. No sailor would call it rough in the bay, though landmen think it is. Sometimes the pilots steer crooked, or do not know the channel, or the rudder is disabled, then is the only time a large vessel can go ashore. We have a new dry-dock and some huge coal-bunkers newly built. There are four or five large wharves; two have railroads to their ends. I have not counted the small wharves, but should think there were at least eight. The bay is twelve and a half miles long, and from one to two and a half wide. Seven miles of this is the deep water. Whenever questioned, the foreign captains all agree that our harbor is the best they ever entered. M. W.

San Diego, Cal.

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Our Fireside.

YOU KISSED ME.

You kissed me! My head had dropped low on your breast,
With a feeling of shelter and infinite rest,
While a holy emotion my tongue dared not speak
Flushed up like a flame from my heart to my cheek.
Your arms held me fast—oh, your arms were so hold!
Heart beat against heart in that passionate hold;
Your glances seemed drawing my soul through mine eyes

As the sun draws the mist from the sea to the skies:
And your lips clung to mine, till I prayed in my bliss
They might never unclasp from that passionate kiss.

You kissed me! My heart and my breath and my will
In delirious joy for the moment stood still.
Life had for me then no temptations, no charms,
No vista of pleasure outside of your arms.
And were I this instant an angel, possessed
Of the glory and peace that are given the blest,
I would fling my white robes unrepiningly down,
And tear from my forehead its beautiful crown,
To nestle once more in that haven of rest,
With your lips upon mine and my head on your breast.

You kissed me! My soul in a bliss so divine,
Reeled and swooned like a foolish man drunken with wine,
And I thought 'twere delicious to die then if death
Would come when my mouth was yet moist with your breath.

And these are the questions I ask day and night:
Must my life taste but one such exquisite delight?
Would you care if your breast were my shelter as then?

And if you were here, would you kiss me again?
—Josephine S. Hunt.

Reverses of Fortune;

OR,

Grace Seelye's Business Adventure.

CARRIE MAY ASHTON.



GRACE SEELYE was one of nature's fairest daughters, and endowed with that rarest of virtues, tact, combined with plenty of good, common sense. So it was not to be wondered at that she was a general favorite with all who knew her. Her father was at one time one of the wealthiest men in the aristocratic city of D., but owing to a dishonest partner, he had suffered from severe losses the past year, which had told on him both physically and mentally.

A month before the opening of our story he had been thrown from a carriage, one dark night, and was brought home unconscious. No bones were broken, but he had sustained internal injuries. He lived ten days, but never regained consciousness. His life had been irreproachable, but like many another man, he had had the utmost confidence in his partner, and had signed many notes with him, which, when compelled to pay after his disappearance, his own property was badly crippled.

Mrs. Seelye had been a patient invalid for many years, and surrounded by every luxury that money could buy, and the love and devotion of a tender husband, she had lived a quiet, happy life.

Mr. and Mrs. Seelye had been blessed with three daughters, but no sons, and at the time of his death, Florence, the eldest, was twenty-five; Lillian, twenty-three; and Grace, our heroine, twenty-one. Not one of the three had ever thought of earning her own living, nor dreamed the time would ever come when it would be a necessity. Accustomed to the best society they had always been, but they had never lived for that alone.

Florence was quite an artist, and had spent two years studying in Germany. Lillian was a great student, and was generally found in the library, book in hand, while Grace was, as the other girls called her, "very matter-of-fact" and practical. It was she who looked after the household matters, gave orders to the cook, and had a general supervision of domestic affairs. She loved to mess in the kitchen, from babyhood up, and was always concocting dainty and delicious desserts, cakes, creams and ices, which the rest were only too delighted to eat and praise; but they always joked her about her art of cooking.

Grace was engaged to Ralph Foster, a rising, young lawyer who had known her from childhood. Their engagement was really a boy and girl affair, and Grace was in no hurry to marry and settle down; she was having too good a time for that.

Mr. Seelye's death was a terrible blow to his family, for he was a loving and tender husband and father, and had been everything to them. It was Grace who rallied first and took the lead now as she had many times before. It was she who comforted the broken and crushed wife and mother, who gave the orders for the funeral, and who looked after everything. Florence and Lillian were too crushed and worn out to do anything, or to even leave their room. Poor Grace looked

like a statue, so cold and white she seemed. Where was her lover all this time? Out of the city on a business trip.

After the funeral, the family lawyer, into whose hands all business matters had been placed, came up for a long talk. It seemed best to close out the large business, which was heavily involved, and settle everything as far as it would go. Mr. Seelye had owned a large interest in a mine in the West, which was supposed to be very valuable, but from reports recently received, it was thought to be worthless. The house was theirs, but it cost a small fortune to maintain it, and it was finally decided to rent it for a year, all furnished, if desirable parties could be found. In the meantime they would move into a cottage that had been given Grace for a birthday gift, two or three years before, by her indulgent father. It was a cosy, little place, well kept up, and in a pretty part of the city, but very different from the magnificent home they were leaving.

It was decided that they would retain their second girl, who would assist them in general housework, and Grace would have charge of the cooking. Their silver, china and pictures, odd chairs and other necessary furniture, besides drapery, etc., they kept, and in the course of a month the family were cosily domiciled in the little cottage. The large house was rented to an old friend of their father, a Mr. Warren and family, which consisted of a married daughter and her husband, a son



twenty-eight, and two young ladies of twenty and twenty-four.

Grace was at work in the kitchen, one bright morning, when Ralph Foster was ushered in by their one servant. She did not wait to change her dress, but putting on a fresh, white apron, was soon welcoming him to their new home. He had been much pained and surprised to hear of Mr. Seelye's death, and after listening to all the particulars, he begged for an early marriage. He had decided to locate in a thriving, western city, and wanted Grace to go with him as his wife.

"No, Ralph, now of all times I cannot leave my mother and sisters, who are so dependent on me. If you must go, it will have to be alone. I shall miss you sadly, for my life will be a very different one, with papa gone, and you are all I have to cling to now; but I will not lay one straw in your path. I am needed here, now, and there is no telling how long I shall be. If I am worth winning I am worth waiting for, Ralph."

Ralph would not listen to this, and finally his disappointment was so great that he burst into a rage, saying:

"Well, your love can't be very deep if you won't marry me and help me make a home in a western city, when I have such grand opportunities offered me. Well, good-by, Grace. Hereafter we meet only as friends."

Grace held out her hand to show that she felt no bitterness, but only sorrow that this should be the end of their hitherto pleasant engagement, and laying the ring she had worn so long, in his hand, said:

"Good-by, and may God bless you, Ralph. I hope you may never regret this."

She then left the room, and going upstairs, had a good cry all alone in her own sanctum. She soon dried her eyes, and after bathing her flushed face, went back to the kitchen and finished the cake she was making. After dinner she told her mother of the broken engagement, and asked that it never be spoken of again.

The summer passed quietly and uneventfully, but it was no easy task for Grace to have all the care and responsibility on her young shoulders. The other girls took no interest in anything, and refused to see any callers. It was Grace who received them and chatted pleasantly while they were there; it was she who prepared dainty dishes for the invalid mother, who was so patient and lovely in her

saddened room. Grace was by no means perfect, and many a night would she cry herself to sleep at her hard lot; but she would get up in the morning with renewed strength and courage, and her hope of a better time never forsook her.

Business matters began to be troublesome, and Grace, after vainly trying to make one dollar do the work of three, went to their lawyer friend and asked his advice. They must live, and her mother must have nourishing food and many of the little luxuries she had always been accustomed to, but to do it longer on the small sum they had been living on seemed impossible.

Of course, the rent of their home brought quite a sum, but out of that came the taxes of both places, which amounted to considerable. Mr. Wallis was an old friend of the family, and had done his best to save something out of the wreck, but in vain, and now it pained him to see Grace, the youngest of the family, planning and devising a way for swelling the family income.

What could she do? She disliked sewing, had no knowledge of stenography or typewriting, was not proficient in music, art or the languages, and could not leave home to teach on account of her mother. She was in a brown study the rest of the day, and scarcely spoke, except to answer questions.

Lillian, who was tired of the monotonous life she was leading, finally said:

"Let's have a frolic to-night, girls, and make candy. I'll run over and ask Kate and Nell Sanborn (their most intimate friends since their reverses) to come over, and we will have some fun. Grace can make some of her delicious chocolate and walnut creams, and the rest of us will make taffy and butterscotch." And off she ran to see the girls. All at once Grace came out of her brown study, and her face brightened up wonderfully.

"Sure enough, why didn't I think of it before? I always could make candy, and now is my time to turn whatever talent I have to good use. I'll take sample boxes to the confectioners and grocers to-morrow morning, without letting the girls or mamma know it." She sent the girl after some nuts, sugar, chocolate, etc., and got the marble slab ready for the taffy, and all necessary uten-



sils. The girls came over to tea, and busied themselves cracking nuts until the pleasant kitchen was ready for them.

Bright, ambitious girls were Nell and Kate, who, although the daughters of a rich man, were not afraid of work, and their friends were chosen for their real worth instead of their position in society or wealth. They were both thorough business women who knew how to take care of money, and invest it as well, if not better, than their brothers.

Grace decided to make a variety, and as she was a good leader, the girls were willing to obey all orders, and she soon had them all hard at work. Florence and Nell made the uncooked, or boarding-school candy, as it was called, while the two other girls made the taffy. Grace kept herself busy with the chocolate creams, which require the utmost care and patience.

When the evening was over, they had a goodly supply of the most delicious candy in cocoanut, chocolate, walnut and date creams, besides taffy, butterscotch and caramels, and all felt brighter and better than they had for some time. The girls each took home a generous box, after which Grace put up half a dozen of the daintiest boxes possible, saying to the girls she wanted to use them. Grace had so many friends among the children, and was always doing something for them, that it did not in the least surprise the others.

Soon after breakfast the next morning she started out with a note-book and package under her arm. Going to the best confectioners and grocers, she said:

"I want you to try my candy and see if I can

furnish you some every week. It is pure and fresh, and I shall do my best to please you."

"But, Miss Grace, I don't understand your doing this," an old friend said, with a puzzled look on his face. "It isn't necessary for you, is it?"

In reply the young girl said:

"My father's business was so involved that I must do something to eke out our scanty income, and as I know how to make candy better than anything else, I am going to try that."

The merchant glanced admiringly at the plucky and brave girl, whom he had known from babyhood up, and with a bright smile, said:

"Miss Grace, I shall be glad to serve you in any way. Your father was a good friend of mine, and did me many a good turn when I didn't know what to do. Of course I will sell your candy, and it is really delicious; so there is no doubt but you will make a success of it. Would that there were more girls as brave and fearless."

Meeting with success at four places out of the six, and receiving orders for a large supply to be delivered the next day, she hurried home. The girls were horrified, and threw cold water on all her plans; but she soon sought the dear, little mother, who drew her down to the couch and kissed her lovingly, saying:

"Dear child, I am very proud of you, and know you will succeed in the new business venture. If only I might help you, dear, in the undertaking!"

So Grace went away greatly cheered, and having sent the girl out for supplies, went to work in earnest. Nora was devoted itself to Miss Grace, and was never too tired or busy to stop and run an errand for her, or help in various ways.

It was by no means easy for Grace to work day after day at this, for making candy occasionally for fun and making it every day for work she found vastly different; but she plodded on faithfully and patiently. The girls seldom came into the kitchen, and never offered any assistance.

Her trade kept increasing until she was obliged to hire another girl to help her all the time. The candy found a ready sale, as it was fresh and delicious, and put up in dainty boxes. Many a luxury found its way on the table, and occasionally there were tickets for a concert or opera. Grace said but little of her work, but she soon learned to enjoy it, and her daily walk each day kept her fresh and bright. Nothing could have been better for her than this work, which occupied not only her time, but her thoughts as well; so she had no time to dwell on Ralph Foster and her broken engagement. Occasionally she heard of him in his western home as doing well and rising in the world.

The family wanted to rent the house for another year, and as they were careful, honorable people, it was decided to let them stay. Lillian and Florence commenced going in society a little, but Grace seldom went out except to church, lecture, or occasionally to a concert. She preferred reading, or a quiet talk with the patient mother.

This was a profitable winter in more ways than one to Grace, for she studied Emerson and other prominent works as she had never studied before. Occasionally she would write an article for some bright paper or magazine, and one day received a letter from a well-known publisher, complimenting her very highly upon an article she had written, and asking her to write a series of them for his magazine. The remuneration offered almost took Grace's breath away. She had not supposed her articles had any real merit, and it was almost too good news to believe. She continued her business, and wrote much during the evenings while the girls were out to parties and the theatre. Her style was clear and forcible, and her independent fearlessness greatly pleased her readers.

Her bravery and courage had long been admired by Lou Burbank, one of D.'s most prominent and well known young men. He had often sent magazines, fruit and flowers to Mrs. Seelye, whom he had admired for years. Quite literary himself, he encouraged Grace in her writing, and often acted as critic for her. Sometimes, on rare occasions, he would take the older girls to some party or reception. Grace was always included in the invitation, but declined with thanks. His calls, which were quite frequent, did not arouse any one's suspicions that they were meant in other than a friendly way, for he never paid more attention to one than to another, unless it was to Mrs. Seelye.

Time went by, until it was three years after Mr. Seelye's death that Grace had supported the family, besides saving a thousand dollars. From her writing alone the last year she had made \$500. She had long ago been thankful that her engagement was broken, for she felt that Ralph and she could never have been happy. She had grown and broadened so in her new life that it really seemed as if she never half lived until she commenced to think of something besides having a good time.

A letter received a few days before, from Ralph, had begged to renew the engagement, and asked her pardon for his impetuosity and anger on that day so long ago. He loved

her as he never loved before, he wrote. But she had grown beyond him. He had thrown her love away when she needed him, and now, when she could stand alone, a self-reliant, noble woman, he was ready to take her back again.

No, never could she marry him. So she wrote him a kindly letter telling him she could never be other than a friend to him, and had "no love to give. When she married, it must be a man whom she could thoroughly respect and honor, and who could appreciate her value as a true helpmeet. She looked upon marriage as altogether too sacred to be entered into lightly, and she could never marry a man who did not believe in equality. She should want to go on with her literary work just the same. Already she was planning to publish two little books, one on "Candy-making at Home," and the other, "What Our Girls Can Do to Earn an Honest Livelihood."

The 22d of February dawned bright and clear. Mrs. Seelye, the first time in three years, had been induced to spend a few days with a dear friend who had sent her easy carriage for her, and thought the visit would brighten and cheer her up wonderfully. The girls were going to a Martha Washington party in the evening, and were busy getting their costumes in order.

Grace, who, for a wonder, was taking a holiday, was really lonely without the mother who was so seldom gone, when Lou Burbank drove up with his handsome grays and invited her to go for a drive. The sleighing was splendid, and never did she enjoy a ride more. It took her back to those old days when her father was alive and they had horses and carriages and rode at pleasure; and yet she lived more in one day now than in a dozen in those days. Except for her father's death, she had no wish to go back and live those years over.

There was such a perfect understanding between Mr. Burbank and Grace that before she was aware of it she was telling him of her early girlhood, of her tender and noble father, whose loss could never be replaced. After listening to her story, he said:

"Grace, I have watched you carefully for three years, and in that time have learned to honor, admire and love the girl who has been so true to herself and family; who has never faltered in the performance of tasks that her sisters would not perform, and with all this has kept her tenderness and womanliness, and has grown strong and brave in her work. Now, I want her for my wife. I do not ask her to leave the invalid mother, for our home shall be her home, and the girls shall live with us when they care to. You shall go on with your work, and I hope and trust that we can help each other and many others less fortunate than ourselves. Grace, will you marry me in the springtime?"

Her answer was plainly seen in the bright eyes that were raised to his, and the ride home was all too short for the happy couple.

The good people of D. were greatly surprised when the aristocratic Mr. Burbank married Grace Seelye, who had, since her father's death, supported the family by the sale of candy.

Grace is the happy mistress of a lovely home. Her idolized husband is devoted to himself, and they have two lovely children. She has written several books on practical subjects, and still contributes many valuable articles to the leading magazines of the day. Never for a moment has she regretted her business experience, and she intends giving her children a thorough business training, which will enable them to take care of themselves, whether they have money left them or not.

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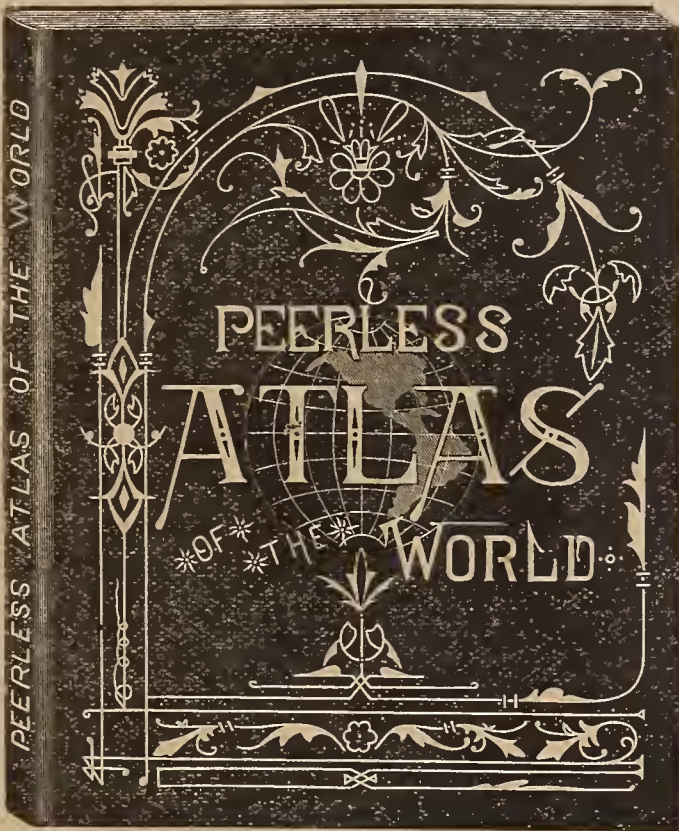
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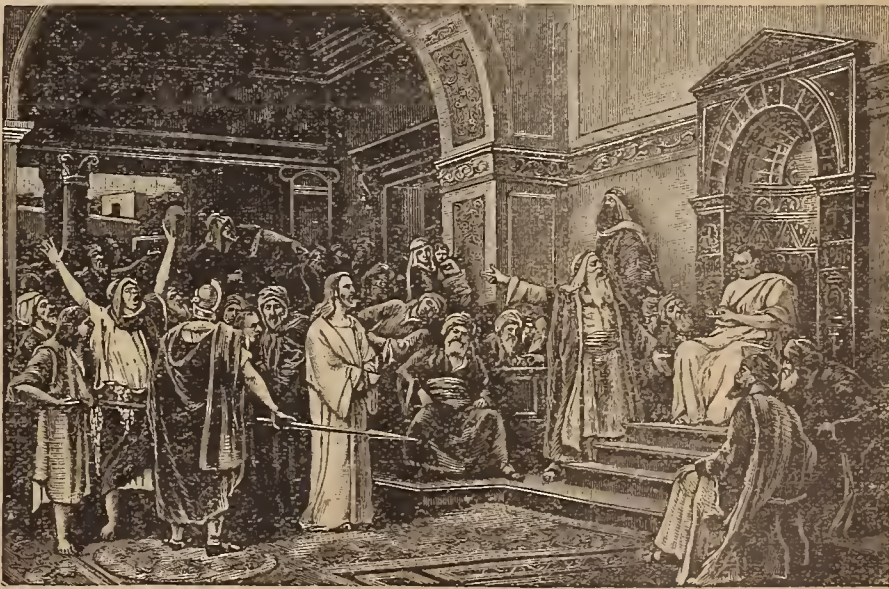
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DESCRIPTION OF THE PAINTING The scene chosen for the painting is the "Judgment Hall" in the palace of Pilate, and the hour "early in the morning." Around the Governor the priests are gathered, and the high-priest, Caiaphas, is accusing Christ and demanding his death. The central figure, and the most impressive of all, is Christ himself, clad in white, with flowing hair and bound wrists. He stands alone in the simple majesty of his own personality, without sign or symbol, save his individual greatness. A heavenly submission is on his face.

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Our Household.

LOVE'S WAY.

They say it's an old, old story,
That the soul of nature came
Of old, in an hour of glory,
As a loving heart of flame;

With tenderest human feeling,
For the proud, the hardened slave
Of lust, for the outcast, reeling
Through shame to a nameless grave.

And that still this old, old story
Is only a mystic dream;
That creation's brightest glory
Is science, and law, and steam.

But love has its science, older
Than the oldest worlds of time,
And its laws, and forces bolder
Than the heroes called divine.

It loves and dies, and comes again;
Rejected, it flies away;
But conquers life through joy or pain,
Is god of each night and day.

—Pittsburgh Dispatch.

HOME TOPICS.

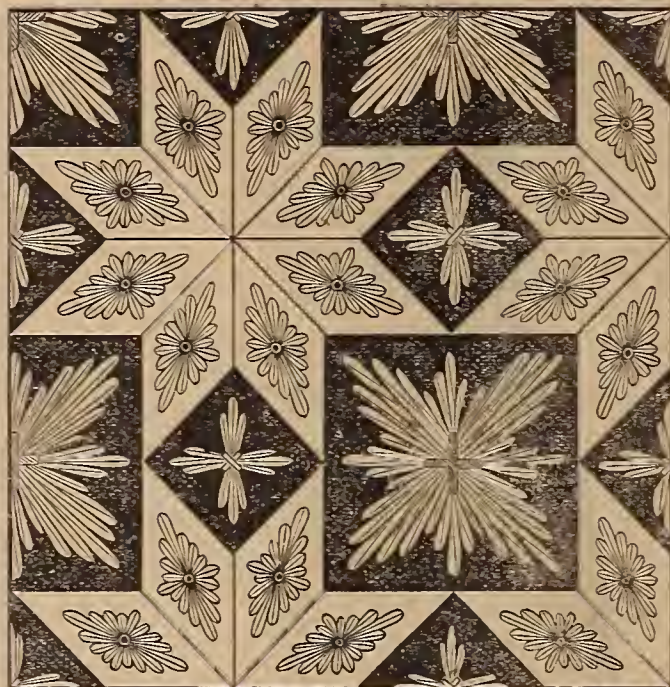
MACARONI.—Macaroni is such a cheap, palatable, healthful and easily prepared food that I wonder it is not more generally used. It can be prepared in so many forms that although on the table often one will not tire of it. A pound package only costs twelve cents, and half of that amount will be sufficient for a family of six persons. Break the macaroni into inch-long pieces. Have about three pints of water in a sauce-pan, and when it is boiling throw in the macaroni and add a tablespoonful of salt, cover the sauce-pan and let it boil about twenty minutes, then turn it into a colander to drain. Put a teaspoonful of butter and half a teacupful of cream or milk into the sauce-pan and set it on the stove; wet half a teaspoonful of flour, or better, of corn starch, with a little milk, pour it into a sauce-pan, and when it boils, put the macaroni back into the sauce-pan, season with a little cayenne or black pepper, stir well and serve as soon as hot. This is plain boiled macaroni. If cheese is liked, add half a teacupful of cheese after putting it back in the sauce-pan and stir well together. Another time, after boiling and draining the macaroni put it in a buttered pudding-dish and pour over it a pint of stewed tomato, seasoned as if for the table, sprinkle bread crumbs over the top and set it in the oven until slightly browned over the top. Another way is to boil the macaroni in soup stock or the broth in which meat has been boiled.

A good pudding is made by boiling a cupful of broken macaroni in salted water ten minutes, then drain it and add three cups of boiling milk and let it simmer twenty minutes longer. Beat one

over the whites of two eggs beaten to a stiff froth. Stir while pouring it on. Flavor to taste with lemon or vanilla.

Rice may be cooked in all the ways mentioned for macaroni and be a very good substitute. One who has never used rice except as a sweet dish has much to learn of its possibilities.

LETTERS.—One who has never been away from home among strangers, or left in the old home alone when all the dear ones who made it home have gone out, cannot realize what a blessed comfort letters from absent ones bring. We all love to get letters, but I think no heart hungers for them more than the old folks, who, after raising a family of boys and girls,



EMBROIDERED PATCHWORK.

have seen them all go forth to build homes for themselves, and leave the old home so lonely and silent. I was talking with an old lady, a few days ago, and asking about her children. She said, "I have not heard from John in five or six months, and Mary and Julia only write once in a great while. I think, sometimes, that they have nearly forgotten their father and me." The old lady's voice trembled and her eyes filled with tears as she spoke. My heart ached for her. I thought of the grief it would bring to me if, when my children leave the home nest, they should neglect me in that way. If any who read this are letting the cares of the new home take so much of their time that mother is being neglected, I hope they will do so no more. If you live too far away to visit your parents often, write them a letter every week. It will not take much time and will bring so much joy into their lonely lives. Write about the children, about your home, what you are doing; write as you would talk—anything pertaining to your home and self will interest the dear old folks at home, who miss you every day.

It is a sad thought that families must be broken up and scattered, but if frequent letters pass between brothers and sisters, they will not grow apart and indifferent about the old home and each other.

MAIDA McL.

PATCHWORK.

Patchwork is not solely confined to quilts and cushions, for very handsome piano-covers, tidies, sofa-pillows, etc., can be arranged; in fact, to the ingenious turn of mind many ideas will suggest themselves, or those not capable of originating or caring to rely upon

their own faculties will find the illustrations of this most fashionable of needlework suitable for reproduction for everything they may desire. The great thing is to have a good assortment of colors and bright-colored silks for the embroidery, then the taste of the worker must be exercised as to the arrangement of colors.

When doing design patchwork, first cut out the key pattern in stiff cardboard, so that it may not get out of shape, as great accuracy is needed in cutting the material, otherwise, the pattern would not join

evenly and well. Paper also has to be cut out to match the material, which has to be tacked smoothly and firmly over the pattern, turning the edge of the silk in ready for sewing the parts together. Join the pieces on the wrong side with small stitches. Do not remove the paper until the patchwork is complete, and even then some ladies prefer only to remove the tacking threads, the paper giving firmness to the work. However, when removing the paper always commence from the center of the work, just as you do for quilting, as by commencing in the center you can smooth out all inequalities towards the edges. Care is needed in doing fancy patchwork to well scatter the colors, as it would not do to get light or dark tints all massed together; try rather to get the shades evenly distributed, which will add much to the beauty of your work.

EMBROIDERED PATCHWORK.

Any two well contrasting pieces of silk and velvet, or satin and plush, will form this handsome design, the full size working patterns being given. Care must be taken in cutting the pieces out accurately, and they must be lined with paper or muslin, the latter, perhaps, being the best, as it gives support for the embroidery, which must be done in a well contrasting embroidery silk, so as to

give a bright and attractive effect. The various pieces are sewn together on the wrong side as neatly as possible, so that no stitches may be visible.

BLOCK PATTERN PATCHWORK.

Only two kinds of materials are needed for block pattern patchwork, such as velvet or plush with satin or silk. It consists of a center of satin cut from the diagram, which gives the exact size and shape, around which are set alternate smaller blocks and triangles, cut from 1 and 2 of diagram. These pieces of silk must be lined with newspaper, and neatly sewn together on the wrong side, and when the work is complete the paper is pulled out. The center of each large white block can be embroidered or painted to enrich the work.

A PRETTY PATCHWORK.

This style of patchwork can be copied in any three materials, such as silk, satin and velvet or plush, or any one of these materials may be successfully used in three strongly contrasting tints, or pieces of chintz or sateen are useful.

The following diagram shows the exact size and shape of the three pieces required to form this design:

Six sections of the size and shape of piece No. 1 being necessary to form the star, six squares or blocks like piece No. 3 for joining to star, the corner or point of each square joining to the point of the star; then to divide these squares are six diamond-shaped pieces to be cut from piece 2, the union of these pieces producing an almost circular shape. A similar number of No. 1 stars and No. 3 squares are again joined in the same manner, to which, however, only five diamond-shaped pieces like No. 2 are sewn, one of the diamonds from the previous section being joined at its loose edges to the squares having no diamond piece attached. The next figure is made in the same way, but with only four diamond pieces attached, two of the diamond pieces to the loose edges from the two attached figures being joined at the loose edges of the square. The latter process is repeated throughout till the patchwork is of the required size.

[To be continued.]

SUN-BONNETS.

There is a diversity of opinion as to which is the better shade, a large hat or a sun-bonnet. The hat is certainly more comfortable, but does it afford the same protection as the bonnet, all things considered? True, the bonnet is very warm, preventing, as it does, the gentle breezes from fanning the face. But that same zephyr wind is very deceptive, for while gently kissing the cheek, it is leaving its mark in the shape of a beautiful coat of tan—a mark some maidens do not particularly relish. As a bonnet does not allow the wind the same freedom a hat does, is it not reasonable that the bonnet is the better protection for wear in the country, when at work outdoors?

Having decided in favor of the bonnet, the question arises, What material is best for a bonnet intended for common wear? Scotch gingham is, perhaps, best of all, but there is not much difference between a domestic gingham and a good grade of print; if a good brand of calico, it will not fade as much as gingham.

Some women still prefer the flat bonnet; in that case a good supply of pasteboard will be necessary. Some women who really prefer the quilted bonnets use the flat bonnet for no other reason than that they cannot launder the quilted ones as they should be laundered. And it is quite a piece of art to starch and iron a bonnet perfectly, though many do not think so.

As a hint on doing up bonnets may be welcomed by some reader, the following method will surely prove a successful one: First, starch the entire bonnet in good, boiled starch; then restarch the quilted part in thick, boiled starch. When perfectly dry, starch the quilted part again by taking a teaspoonful of starch to two thirds of a teacup of warm water, to which has been added a few drops of kerosene. Fold the bonnet tightly and let it lay an hour. Iron with a rather hot iron. If the starch is inclined to stick to the iron, lay a thin cloth over the bonnet while ironing. Or, rub a cloth (in which a lump of beeswax has been tied) over the face of the iron, then rub the iron over a paper or cloth before placing it to the bonnet. Beeswax is the best thing to prevent starch sticking to irons.

ELIZA RENAN.

RAG CARPET AND FANCY WORK.

I would say to you who are making rag carpet, don't be too anxious to make a pretty carpet, and tear up useful things just because you want that color. If you have no little ones to make over for, give to some poor, unfortunate person that is

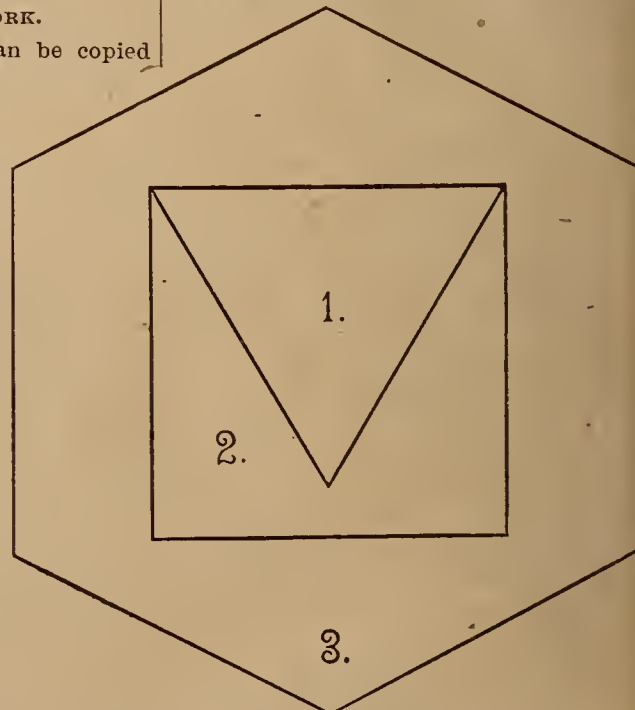
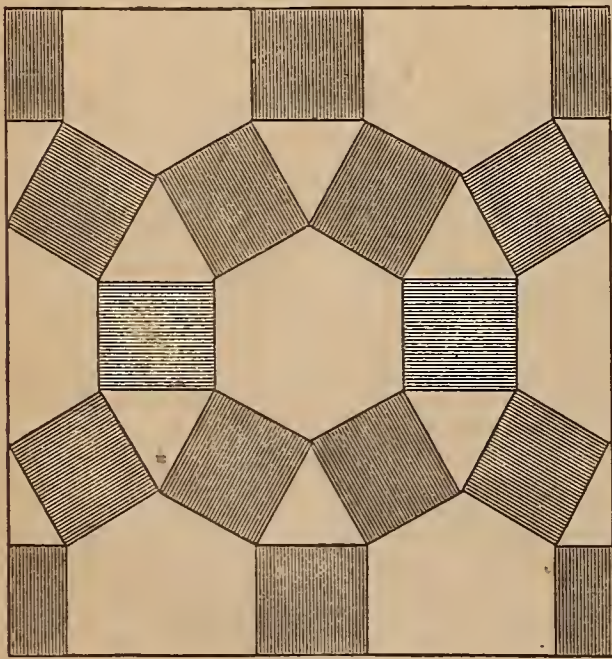


DIAGRAM OF BLOCK PATCHWORK—FULL SIZE.

blessed with many little ones and little to clothe them with. If you do it in the right way, you need not fear giving offense.

Do not spend too much time on fancy work, but rather help some overworked mother, and take little garments and finish them up for her by making button-holes and sewing on the buttons; or, if you can run the machine for her a day, try it, and see how happy and thankful you will both be for it. I once had such a neighbor, and shall always love her memory, although many miles are between us.

SALLIE.



BLOCK PATTERN PATCHWORK.

cupful of sugar, one tablespoonful of butter and four eggs together and pour the macaroni and milk over it. Season with vanilla or lemon, stir all together, put into a buttered pudding-dish and bake thirty minutes in a steady oven.

This pudding is nice eaten with butter and sugar creamed together, and seasoned to taste, or with a sauce made as follows: Put a pint of cream in a bowl and set it in a sauce-pan of boiling water on the stove, or heat it in a double boiler until it is scalding hot, sweeten to taste and pour it

PASTE FOR SCRAP-BOOKS.

A great many people have admired our scrap-books for their neat and unwrinkled appearance. To the paste belongs most of the praise.

Take equal parts of gum arabic and gum tragacanth, and dissolve with enough warm water so that it will be like thick gloss starch; if, on trial, you find the paste too thick to spread nicely with a small brush, thin with more warm water, stirring until it is smooth again. A small amount of gum makes a lot of paste. Keep in a large-mouthed bottle that can be covered tightly, and it will keep for months, yes, a year or more.

If it dries down hard or thick, soak it up with more warm water. A bottle of this stuff is very handy during fruit season for pasting labels on fruit-cans or jars.

In making scrap-books, the slips of paper or pictures should be arranged on the page before commencing to paste any, as they will stick so quickly and so tightly that it is not easy to make any changes. If the pictures are large, it is not necessary to put any paste over the center; just fasten the edges down securely and it will stay. If the pictures are stiff cardboard, it may be well to place a weight over them a few minutes until the paste becomes firm. All pictures should be pressed firmly into place, but the thicker ones are a little harder to keep down. If any paste oozes out from the edges, take a clean, white cloth and wipe it up, rubbing the page gently but firmly. It will come off, without leaving any of the "dauby" spots that are left from flour or starch paste.

I think it does not wrinkle the pages, because the paste dries so quick that they are not wet through very much, unless you get the paste too thin, and then they do not seem to wrinkle as bad as some other books I have seen.

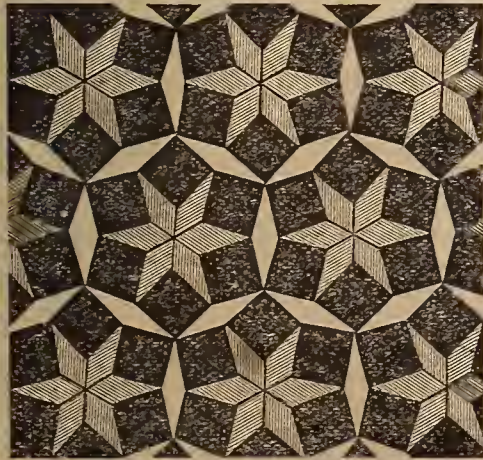
It is best to fill only one page at a time, and then shut the book and put it under a larger one to press for awhile; if one has two books that he is filling, there can be rapid work, as he may fill the page of the second while the first is drying, and by the time that is finished to lay aside, the first may be taken up.

A little experience with this paste will soon give you a scrap-book that will look as if it "grew so," much prettier than the ones carrying the marks of flour paste all through and the leaves so wrinkled that they are not a "joy forever." TOPSY.

MEALS FOR SUNDAY.

Here is a hint in regard to Sunday meals. It may help some woman to get more time to rest on Sunday and at the same time have a tasty dinner.

On Saturday morning buy a piece of neck beef. With a sharp knife cut out the lean part, leaving fat, gristle and bone. Put lean pieces in a wooden bowl and chop very fine, season with butter size of a hen's egg and pepper, salt and sage. Press into thin cakes and set away in a cool



A PRETTY PATCHWORK.

place. Put fat, gristle and bones into a kettle, cover with cold water, set on the stove and cook slowly till the bones will slip out. Remove the bones, season with salt and pepper and set away.

Sunday morning, lay the beef cakes in a very hot spider without any fat and cook over a hot fire. Make coffee and cut a generous quantity of bread, and breakfast is ready. After breakfast, peel potatoes and any other vegetables that are relished and leave in water till twelve o'clock.

Put the meat and broth and vegetables in a kettle, and stir up a dumpling made of

a quart of flour, a small half teacup of lard, two teaspoons of baking-powder and water enough to make a soft dough. Lay the dumplings over the meat and cook 45 minutes. This, with tea and coffee, bread, butter, pickles and pie will make a dinner good enough for anyone, and need not take more than an hour to cook and serve, thus leaving the housewife more time for Sabbath rest and thought. Don't try to get supper on Sunday. If necessary, have a lunch of bread and milk or crackers or cake just at dark.

Save strength and health by being careful not to overwork at any time.

ELLA E. HEDGE.

CHRYSANTHEMUMS.

I want to tell the readers of the FARM AND FIRESIDE about my lovely chrysanthemums, which began to bloom the first of September and continued in bloom until January. I lost all the blossoms on my chrysanthemums, one fall, by following the advice of a florist who sold me the small plants. He said to set them in my flower beds and lift them and put in pots in September; this I did and every bud blasted. Now I set my small plants in large pots or boxes, like a soap or starch box, or sometimes in an old hot-bed; when a foot high I cut off two inches of the tops, and this makes new shoots start from the roots. Do not cut off the tops, however, after July, as the buds begin to form in August.

One of the prettiest varieties I have is L. Canning, an exquisite, pure white flower, looking like a large, satin rosette. Sunnyside is a lovely pink, which, when fully open, resembles a pond lily. Nymphaea is also white and very sweet scented; leopard is a deep carmine, spotted white; Mrs. May and Mrs. Elliott are lovely shades of yellow. The ostrich plume does not look like an ostrich plume at all, as some advertisement represent, but it is a very beautiful variety, every petal looking like loose-piled plush; Mrs. Langtry is the very largest variety I have ever seen; some of our flowers measured twelve inches across, while many were eight and ten inches across. Chrysanthemums are fine window plants, and the flowers are fine for corsage bouquets and table bouquets, and are very easy to grow.

CHATTA BELLA.

HOUSEHOLD LISTS THAT SAVE TIME, WORRY AND MISTAKES.

"There is nothing in my own experience which I have found of more value than lists—shopping lists, marketing lists, lists for meals, calling, correspondence—lists of every sort and variety to aid the memory and help toward the realization of the Scripture injunction, 'Let everything be done decently and in order.'" Such is the testimony of a writer in *Good Housekeeping*, who says, further:

First, let me speak of the list for meals, which, with the marketing list, has become with me a daily habit. As soon as convenient after breakfast every morning, having made a short inspection of the larder, and, if necessary, having consulted the cook, I sit down and prepare a list for the next three meals.

For this and the marketing list I keep on hand small blocks of paper, (2½ by 5 inches I find large enough), and tear off the lists as I write them. The list for meals I hang on a tack in the kitchen, by the side of the sink where the cook can consult it, and thus, if she happens to have a short memory, need not run to ask what was ordered for any meal. For the marketing list I consult the meal list to see what will be needed for the next

twenty-four hours, adding to these articles anything we happen to be out of, or any other errand I wish to remember. In this way, by giving not more than fifteen minutes' care and thought to the matter each morning, I am able to dismiss the question of food from my mind for the rest of the day.

I do my own marketing, taking my list with me, and starting as early as I conveniently can every morning, in order that the butcher and grocer may deliver my orders before dinner time. My afternoons are always free for calling, reading or sewing, and I have invariably found that the cook likes the list system, and that if I give up the practice for a few days she will feel lost without it, and ask for the "receipt," as one girl invariably called it.

It is often helpful, especially in the

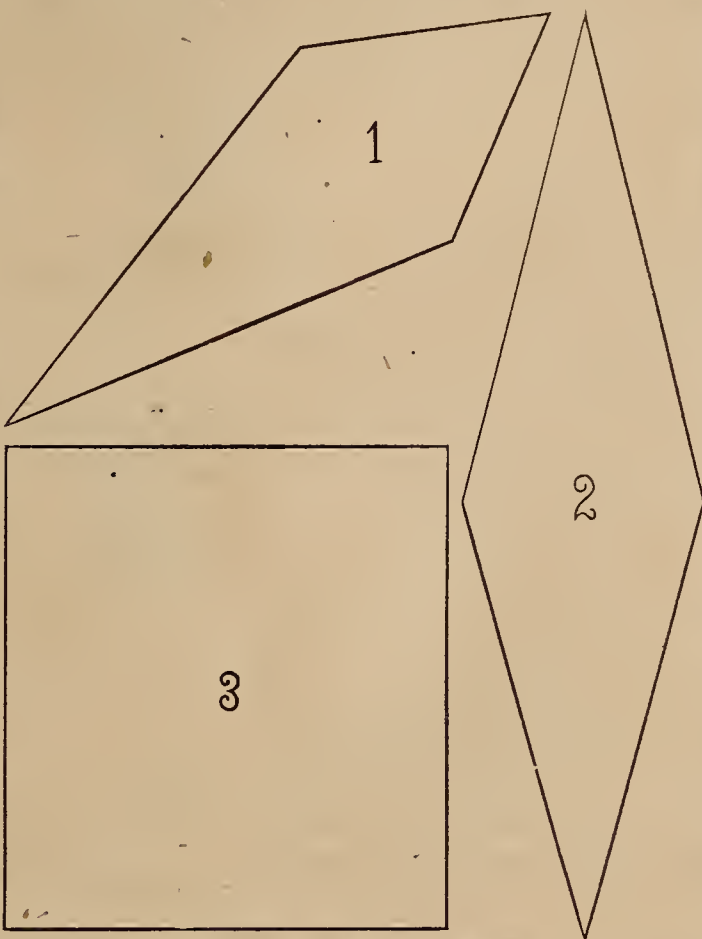


DIAGRAM OF PRETTY PATCHWORK.

busy, house-cleaning time, to make a list of important things you mean to do or have done, as, for example, mending a broken chair, having a troublesome door planed, making a new rag-bag, plastering a mouse-hole and various things of the sort, which will never be done if you do not make a list, and in all probability will, if you do. Always scratch off the things which you have accomplished, and you will take great pride, if your list is a long one, in seeing it grow shorter and shorter until all the troublesome, worrying, little things are done.

To those not accustomed to the use of lists, a first trial may seem too much trouble, but it has always been my experience that the system and order resulting from the habit save not only a great deal of time, but worry and mistakes as well. Have always blocks of paper on hand, and tear off the sheets as you use them. They are very inexpensive, ranging from two to five cents a block, according to size.

FASHIONS FOR CHILDREN.

Low, round, baby waists frequently are finished with a velvet band at the top, and the newest belt is in the Empire style, very wide at one side seam, crosses the front and narrows to a point at the opposite side under a rosette or flat bow of ribbon or velvet.

A costume for a girl of eleven is of plush and vicuna cloth, combined in autumn tints of brown and dark green; the redingote-shaped skirt and bodice of plush forming a V back and front; the green cloth carried over the shoulders in the form of braces, stitched in folds with feather stitching, and continued down the back; plaits of trimming forming underskirt, divided at the waist at the back with three bows of ribbon; front to correspond; epaulets of green cloth, and sleeves of brown plush, and the plush cut up at the sides and back to show green between.

Striped serge makes an attractive cos-

tume for a girl of eight years, with the skirt gathered in the back, kilted in front and having broad side panels of blue corduroy. The Eton jacket just reaches to the waist line over a vest to match, the panels crossed by fichu folds of the dress material from the arm-sizes; the cuffs on the leg o' mutton sleeves, collar and girdle from the side seams, correspond with the vest.

A bright red, blue, yellow and green plaid skirt is cut on the bias, and gathered in three rows all around the top. The low waist is slightly pointed, back and front, and has a guimpe of blue surah laid in narrow tucks, feather-stitched. Bretelles of blue ribbon velvet are brought from the shoulders, back and front, and finish in bows on the point. The full coat sleeves are of plaid, with velvet cuffs.

Zouave, or now called Figaro, fronts of contrasting velvet may be added to any waist, with cuffs to match. Such an addition will remodel one of last year's frocks, and hide the worn portion around the arm-sizes. Full coat, leg o' mutton and short, puffed sleeves are worn. Low, round waists are plain or full, the latter being shirred just in the center, top and bottom, back and front, or all around.

A bright red cashmere has the full skirt trimmed with three rows of inch-wide, black velvet ribbon; the low, pointed waist is shirred in the center, and has several rows of the ribbon sewed in the side seams and meeting at the point under a rosette. The top of the neck and the bottom of the short, puffed sleeves are bound with velvet. The white nainsook guimpe has full sleeves and tiny, turned-over, tucked cuffs to match the guimpe.—*Domestic Monthly*.

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Our Sunday Afternoon.

EXILED.

It comes to me often in silence,
When the firelight sputters low—
When the black, uncertain shadows
Seem wraiths of the long ago;
Always with a throb of heart-ache
That thrills each pulsing vein,
Comes the old, unquiet longing,
For the peace of home again.

I'm sick of the roar of cities,
And of faces cold and strange;
I know where there's warm of welcome,
And my yearning fancies range
Back to the dear old homestead.
With an aching sense of pain
But there'll be joy in the coming,
When I go home again.

When I go home! There's music
That never may die away,
And it seems the hands of angels,
On a mystic harp, at play,
Have touched with a yearning sadness
On a beautiful, broken strain,
To which is my fond heart wording—
When I go home again.

Outside of my darkening window
Is the great world's crash and din,
And slowly the autumn shadows
Come drifting, drifting in.
Sobbing, the night wind murmurs
To the plash of the autumn rain,
But I dream of the glorious meeting
When I go home again.

—Hollis W. Field.

WEIGHTS.

LET us picture to ourselves a man about to take a long journey on foot. He seems quite elated as he prepares for departure, intensely interested in the object of his pilgrimage and safe arrival at its end; but what can we think of his wisdom as we see him burdening himself

with all manner of heavy articles, for which he has no possible use, and which must inevitably impede his progress, if they do not prevent him from reaching the goal? Plainly, this man lacks judgment.

We have started upon a heavenly journey. We have heard what awaits the faithful traveler, and look forward with great joy to our anticipated home. But in some unaccountable way, our progress seems to be hindered. What can be the trouble? Perhaps we have forgotten to lay aside the weights—anger, hypocrisies, envyings, evil speaking, bitterness. These are but a few of the burdens which, without doubt, we are trying to take along with us upon our journey homeward. It is no wonder our prayers are hindered, for these things are very burdensome.

"But we are not guilty of sins like these," say you, shocked at the bare mention of their names. Are you sure? Anger is a very common sin. Are you certain you never indulge in it? And do you stop to think how it dishonors your Master, the meek and patient Jesus who suffered all manner of indignity, and yet "uttered not a word." Hypocrisy. This word in the original means "outward show." If, in any way, we try to make anything appear a little better than it really is, what is it but hypocrisy? Envyings? Well, perhaps not. This is too near an approach to the "Thou shalt not covet" of holy commandment, to be tolerated by one who has even taken the first step upon this heavenly journey. But of evil speaking, it may be said that there are far too many professing Christians who allow themselves unwarrantable liberty in this respect. Of the enormity of this sin and its dreadful consequences, too much cannot be said, and it is such a heavy weight upon one who tries to take it with him upon his journey, that it is doubtful, indeed, if he ever reach his anticipated rest. Bitterness is often the cause, but not always. Some are even so thoughtless as to utter words which must do another an irreparable injury. How unwise, then, to allow these weights to hinder our progress toward that pure home where "there shall in nowise enter it anything that defileth."

—Morning Star.

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Resp'y T. A. SLOCUM, M. C., 181 Pearl St., N. Y.

BEMOANING THE PAST.

It is not unusual to meet people who are always bemoaning the past. There are many such who spend more energy in thinking what they ought to have done, and chiding themselves for not having done it, than in thinking what they ought to do, and planning how to do it.

Life is really too short for this sort of thing; there is too much to be achieved in the present and in the future to justify continuous dwelling on unimproved opportunities in the past. It is always in order and in time to turn over a new leaf, to begin again, to make stepping-stones of the sins and errors and mistakes of the past, remembering them only so much and so long as to learn how to avoid and overcome them in the future.

"Oh if I could live my life over again," says one, "how differently I would act!" But you cannot live it over again. The only thing you can do is to live to-day as well as you can, to straighten your lines of action, and see that they all point upward, away from the wrong, toward the right. Time spent in mere idle regret is worse than wasted.

The atmosphere of regret is debilitating, enervating, asphyxiating. It should be avoided by us as we avoid malarial atmospheres and those saturated with infection. A great purpose will lift one out of regrets, and failing a great purpose, many smaller ones will accomplish the same end. In such a world as this there is always enough affirmative, positive good to be done to occupy all one's time and thought, all one's capacity of doing and willing.

THE HUSBAND'S PART.

The home ought to be a harbor of rest; but if the wife ought to make it so for the husband, none the less ought the husband to make it so for the wife. If she should greet him with a restful presence, he should bring to her a cheerful one. The man who holds his umbrella over himself and leaves his wife to take the drippings is a boor; but that is what not a few of us husbands do in running under shelter from all household cares and leaving our wives to take the pitiless rain of pelting perplexities.

It is said of Governor Jewell that when he was carrying on his shoulders the burdens of a great business and all the political anxieties of a great presidential campaign, he always brought to his home a bright face and a cheery word, and a seemingly light heart; so that care flew out of the window when he entered the door. In this, as in all other phases of life, unselfishness is the truest and best service of self.

The man who takes best care of his wife finds in that very act the best refuge from the stinging cares of his own business. The wife ought always to feel the load lifted off her shoulders when her husband crosses the threshold in the evening. But she does not always. Sometimes it even settles down upon her shoulders heavier than before. What say you, gentlemen?—*Christian Union.*

Recent Publications.

EXPERIMENT STATION BULLETINS.

Sent free, on application, to residents of the state in which the station is located. Address Agricultural Experiment Station.

INDIANA.—(Lafayette) Bulletin No. 31, April, 1890. Small fruits and vegetables.

JAPAN.—(Imperial College of Agriculture, Tokyo, Komaba) Bulletin No. 7, March, 1890. Researches on the manufacture of various kinds of tea, and on the nitrogenous, non-albuminous constituents of bamboo shoots.

MASSACHUSETTS.—(Hatch Station, Amherst) Bulletin No. 8, April, 1890. Experiments in greenhouse heating. How far may a cow be tuberculous before her milk becomes dangerous as an article of food?

MISSISSIPPI.—(Agricultural College P. O.) Second annual report. Bulletin No. 11, February 15, 1890. Charbon.

NEBRASKA.—(Lincoln) Third annual report. Bulletin No. 12, February, 1890. Field experiments for 1889. Bulletin No. 13, April, 1890. Experiments in the culture of the sugar beet in Nebraska.

SOUTH DAKOTA.—(Brookings) Bulletin No. 18, March, 1890. The cut-worm.

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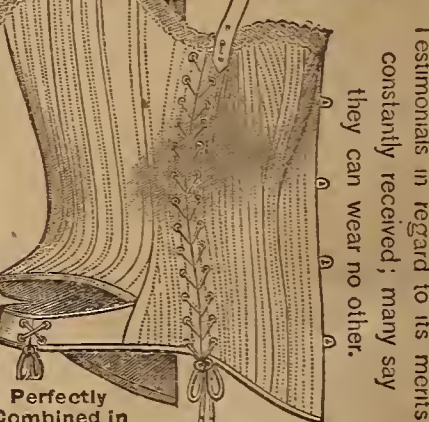
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Our Farm.

THE POULTRY YARD.

Conducted by P. H. Jacobs, Hammoncton, New Jersey.

MR. BISHOP'S BROODER.

Mr. Wm. Bishop, of New Jersey, sends us a design of a brooder, which he makes very plain and easily understood. The scale is one to ten. It has been successful with Mr. Bishop, and should be with others. The brooder is described as follows:

Fig. 1 is the end view. A is a box covered with tarred paper, B the door into the brooder, C an inverted tomato-can for the purpose of a heat drum, and E the entrance or exit for the chicks.

Fig. 2 is the front view, and shows the box (A), the door into brooder (B), the inverted can (C), the door to lamp-box (D), and the tube for diffusing heat (T). The blocks, k k, support both T and C above the floor. S is a complete division of the brooder into two chambers.

Fig. 3 is the top view, A being the box, C the inverted can, S the division and T the tube. G is glass in the top for light, being an 8x10-inch pane.

The brooding frame (Fig. 4.) is 12x14 inches, and is covered with old quilt or carpet, and some kind of thick material is thrown over C and T, to prevent draught, or chicks from crowding against them.

The tube (Fig. 5.) is of tin. About one half of the wall of the tube is removed in the middle, for a distance a little less (one inch) than the diameter of the can, to allow heat to pass into the tube. Fig. 6 shows the tube placed in the can. In all the views the outside wall is broken away to expose to view the heating apparatus.

The brooder is not shown as one equal

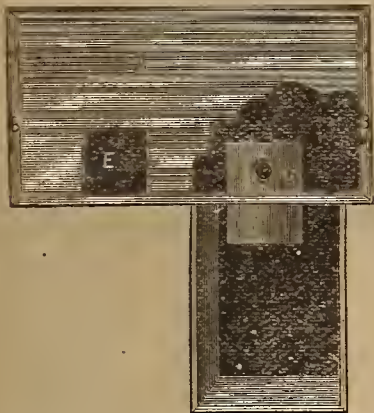


FIG. 1.

to those on the market, but is a cheap contrivance for a home-made affair. Mr. Bishop, with a soap-box, an old fruit-can, a tin tube costing five cents, and a small lamp, made a brooder for less than fifty cents, and he now has several. They hold fifty small chicks. The brooders are out of doors, with small yards attached to them. The lamp portion is below the surface of the ground. Strange to say, the chicks are not affected by any odors or gases from the lamp, as no doubt the smoke comes away as shown by the arrows, R R, Fig. 2.

KEEPING A THOUSAND HENS.

To keep a thousand hens is a task that requires experience. No one should attempt it except by first beginning with a few, and gradually extending. One who has never ventured into the keeping of so large a number is incurring as much risk as if he attempted the banking business without experience. A subscriber sends us a diagram of a single, square house, with yards diverging in every direction, and asks if it is practicable. We are not favorable to such a plan. In the first place, a thousand hens in one house renders the whole liable to be swept away by disease, and some of them will never have the sunlight in their quarters, especially in winter, when the warm rays of the sun are so essential to thrive.

To keep large numbers, they should be divided into flocks of not more than twenty-five, and each flock should be so situated and treated as though it was the only flock to be cared for, and not subject to any drawbacks that may occur with any adjoining flock. Should disease occur, it should be confined to the yard where it first appeared. When a few hens only are kept, no consideration is given

the cost of labor, but for a thousand hens labor is an item of expense. There is much to learn regarding the characteristics of each breed, and the matter of feeding for eggs and for market must be made a study. There are hundreds of obstacles in the way, and we doubt if there are but few farms in this country where so large a number is kept.

As experience is the key to success, the keeping of large numbers should only be attempted after smaller flocks have been managed, and a record kept of the mode of management, receipts, expenditures, breeds used, and the treatment of diseases. The roup or cholera may

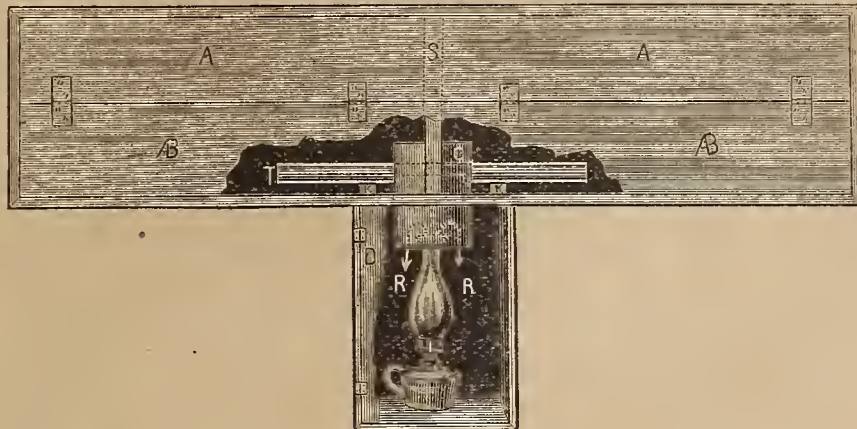


FIG. 2.

scatter the whole flock to the winds in a week. Only those who have begun at the bottom and worked up to each round of the ladder can succeed with large numbers.

LICE AND WARMTH.

This season is more favorable to the propagation of lice than of anything else, and one must not be content with simply making a single effort to get rid of them. The battle must be kept up, for lice multiply so rapidly as to deceive even the most vigilant. An excellent way to keep down lice is to use the soapsuds on wash-day. Add a quart of kerosene to each pail or bucketful of suds, and saturate every portion of the house, roosts, nests, walls, roof, and even the yards. By using a spraying nozzle, every portion of the house can be saturated, and the work done in a few minutes. If the hens have lice, dip them in strong soapsuds, on a warm day, and when they are dry, sprinkle insect powder well into the feathers, and apply a few drops of grease on the skin of the heads. The warmer the house, the faster the lice will multiply, and the house should be kept clean and free of odor.

LIVE POULTRY FOR MARKET.

Crowding the fowls in the coop may save space and expense of coops, but it results in ten per cent of dead fowls before they arrive at destination. A cup for water should be at every corner of the coop, and each fowl should have room enough to move from one point in the coop to an-

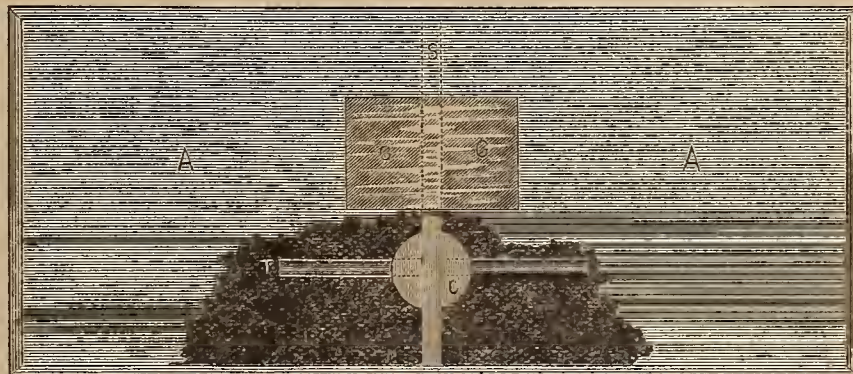


FIG. 3.

other freely. The food is not so important as the water, and unless you have water at every convenient point in the coop, the fowls will not know where it is and cannot drink, the consequence being that they perish of thirst.

YOUNG DUCKS.

In the New York market "green" ducks (ducklings ten weeks old or thereabouts) weighing from four to five pounds, were first quoted on April 28th, the price being 30 cents per pound, which means over two dollars per pair. These prices, however, do not hold long, and after May will rapidly decline, from 28 to 30 cents being quoted May 5th. From the 15th of July until September 15th, prices are generally

low, but they usually increase from September to November, selling at from 15 to 20 cents per pound. These prices are for prime ducklings, however, mostly Pekins being in demand. It is useless to attempt to get high prices for common ducks, as they are not in demand except at very low prices. The importance of a good breed is strongly shown in the case of ducks for market.

CLOVER FOR SUMMER.

Clover, fed to hens in confinement, is better than grain, especially in the summer. When cut fine (half-inch lengths) and placed in a trough for them, they will

apparently eat but little, but if given no grain, the whole of the cut clover will be eaten before night. It should be given in the morning, a trough filled with it, in order that they may eat it whenever they so desire. With a pound of fresh, lean meat to twenty hens, given three times a week, and a quart of corn or wheat twice a week to the same number, the clover will help the hens in good laying condition, and not permit them to become over-fat. If hens are on the range, they can

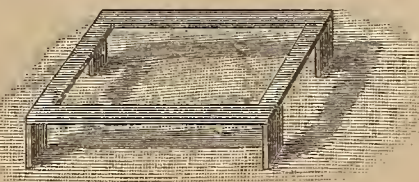


FIG. 4.

secure all the bulky and insect food necessary, a pint of wheat or corn for twenty hens, once a day, being sufficient.

SHIPPING TO MARKET.

Send by express, and pack in ice, if necessary, as the warm weather is very unfavorable for shipping. Dry-pick the fowls, use no packing material, and cool them well. They are simply placed in barrels or boxes, and sent by express. Write your merchant a day or two before you ship.

HATCH LEGHORNS NOW.

As the season is getting late, only the small breeds should be hatched in May for next season's laying. The Leghorns are adapted to May, as the eggs hatch well,

and the chicks are active and forage for themselves. They mature early, and begin to lay before they are six months old. It will cost but very little to raise Leghorns now.

OPEN SHEDS.

An open shed is the best place for poultry in the summer season. The shed should be tight, closed on three sides, and open to the south, as draughts of air on the fowls at night is as injurious as in winter. They may be given plenty of pure air and ventilation, but they do not thrive if exposed to draughts, which induce roup, especially in damp weather.

CORRESPONDENCE.

MATING PURE BREEDS.—I noticed in your paper of April 1st that J. P. H. Letts has different pens of poultry run together in the fall and winter, until time for mating, and then separates them. I keep each pen separate the whole year. I have a nice yard for each kind of fowls to run over, and a good, comfortable house in it. They can go in and out at their will. I am getting eggs the whole year. I have been raising poultry for thirteen years, and find the plan a safe one for pure eggs and pure fowls. P. M. Sloutsville, Ohio.



FIG. 6.

CHOLERA.—A lady told me, two years ago, to give my chickens a teaspoonful each of salt-petre and soda, and it would prevent them from getting the cholera. I tried it, and find it beneficial. I have cured both turkeys and chickens with it. I also keep lime around where they can eat it whenever they desire, as it helps to keep them healthy. Poultry is the only thing there is on the farm that we can make anything on now, as grain and stock are so low. J. J. W. Oblong, Ill.

BEDBUGS IN POULTRY HOUSE.—To get rid of bedbugs in the poultry-house, close the house and burn sulphur in it. If once does not answer, repeat the operation in a day or two after. Do not allow the hens to enter until the house is well ventilated. P. M. Spring Green, Wis.

INQUIRIES ANSWERED.

Canker.—S. P. Mumford, Me., writes: "What remedy can I use for canker in the mouth and windpipe?"

REPLY:—Sprinkle a pinch of chlorate potash in the mouth and down the throat. Also swab with a feather dipped in spirits turpentine, once a day.

Lice.—C. & Co., Willshire, Ohio, writes: "Give a remedy for large lice."

REPLY:—There are several kinds of lice. Grease the heads, close to the skin, and dust the body well with fresh insect powder.

Lice in Poultry-Houses.—N. H. Squiresville, Ky., writes: "Please state how to rid the poultry-house of lice."

REPLY:—Add one quart kerosene to a bucket of strong soapsuds, and thoroughly saturate every portion of the house and floor.

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Silos.—D. E. G., Condon, Col. Send 25 cents to this office for Prof. A. J. Cook's "Silos and Silage," which will give you valuable information on the subject.

Insect Powder.—N. P., High Point, Mo. Buhach, Dalmatian or Persian Insect powder, can be obtained from wholesale drug houses by your local druggists.

Mending Broken Dishes.—J. W. E., Eureka Springs, Ark. If you cannot get any of the good cements sold for mending dishes, at the stores in your town, try the following: Paint both broken edges with pure white lead. Let it be a little thicker than when used in painting. Bind the dish, and let it stand until perfectly dry before using.

German Millet.—W. H. W., Castle Craig, Va. As millet is in bloom and ready to cut for hay about six weeks after sowing, it can easily be grown as a second crop in your latitude. It can follow wheat, oats or hay. Plow and prepare the ground as you would for wheat or oats, and sow broadcast about one half bushel of seed per acre. If cut in the bloom, it will make good hay.

Leather Ashes.—J. F. H., Salem, N. H., inquires about the value of ashes from sole-leather chips as a fertilizer. The chips are worth about \$1 per ton for fuel.

REPLY BY JOSEPH.—I have never seen an analysis of such ashes. Undoubtedly, they are a good fertilizer, and should be rich in phosphoric acid, with some potash. Send a sample of the ashes to your experiment station, with the request to analyze, and report.

Books on Sea Manure and Oyster Farming.—A subscriber of West Manchester, N. H., desires to know title and price of books on "sea manure" (probably on the preparation of sea weed and fish waste, etc., for manure), and on oyster farming. I know of no special works on either subject. James J. H. Gregory, of Marblehead, Mass., has recently published an admirable little book on fertilizers, and in it also touches on the subject of sea manure; that is, seaweed, fish and fish waste composts, etc. I believe the price of the work is fifty cents a copy, and may be had of Mr. Gregory direct, or the Orange Judd Company, Lafayette street, New York City.

Beekeepers' Supplies—Names of Type.—M. T., Johnsonville, N. Y. You can get beekeepers' supplies from A. I. Root, Medina, Ohio. The following will illustrate the kinds of type in common use:

Azate is the name of the size of type in which these lines are printed.

The type usually used on this page is called nonpareil.

The type in which most of the paper is set is called minion. Other sizes are:

Brevier.

Long Primer.

Pica.

Dorset Sheep.—J. C. S., Centre, Ohio. According to Stewart, the Dorset is a breed of sheep that has been kept pure in England for a long time. The most valuable characteristic of the breed is its fecundity and its ability to breed at an early season. The ewes take the ram immediately after the lambs are weaned, and may thus produce two crops a year. The breed is a very profitable one where market lambs can be disposed of. Dorsets are hardy, very quiet and docile, and mature early, dressing about one hundred pounds when two years old. They shear an average of six pounds of white, soft, clean, combed wool. For mutton, they are inferior to the Southdown. We do not know where you can obtain them. Possibly they are advertised in the *American Sheep Breeder*, published by the C. S. Burch Publishing Co., 170 Madison street, Chicago, Ill.

Marl in Virginia.—W. B. J., of Claremont, Va., inquires about the virtues of the marl found so abundantly there—how much to apply for wheat and other crops, etc.

REPLY BY JOSEPH.—The marl that can be had without much effort, in unlimited quantities, in Surry county (as far as I have been able to judge from the James river side), must prove a valuable addition to the worn lands. This marl is probably chiefly carbonate of lime (chalk), but I mistrust, not without some phosphoric acid and perhaps potash. By all means put on your soil all you can afford (or have time) to haul. This alone, with proper rotation of crops, and growing black peas and perhaps clover to give the soil a better texture by the humus addition, will do much to better the soil and increase the crops. It would be worth while, also, to send an average sample of the marl to your state experiment station for analysis. Also, please give us an account of the present condition of the Claremont colony.

Fertilizers for Low Lands.—L. H., of Kankakee, Ill., inquires what special chemical fertilizer would be of use on well tile-drained land, formerly a swamp, having from eight to twelve inches and more of muck underlaid with blue or yellowish clay, sometimes mixed with gravel, etc. During long spells of drouth a white substance (called there saltpetre) covers the surface in some places.

REPLY BY JOSEPH.—You will have to experiment a little. Try bone dust, or some form of superphosphate. The white incrustation on the surface shows that the soil contains a large quantity of saline matter, composed, probably, of common salt, gypsum, sulphate of soda and magnesia, perhaps traces of potash and other salts, as chlorides, and in combination with nitric and certain organic acids. Johnston, in "Elements of Agricultural Chemistry and Geology," says: "Such incrustation is more especially to be looked for in districts where the subsoil is sandy and porous, and more or less full of water. In hot weather, the evaporation on the surface causes the water to ascend from the porous subsoil, and as this water always brings with it a quantity of saline matter which it leaves behind when it rises in vapor, it is evident that the longer the dry weather and consequent evaporation from the surface continue, the thicker the incrustation will be." * * * When rain falls, the saline matter is dissolved and descends again to the subsoil. In dry weather it reascends. * * * In some countries, however, this saline matter ascends in such quantity as to render the soil unfit to grow the more tender crops." Try, also, lime and thorough cultivation.

VETERINARY.

Conducted by Dr. H. J. Detmers. Veterinarian of the Ohio Agricultural Experiment Station, and Professor of Veterinary Surgery in Ohio State University.

To regular subscribers of FARM AND FIRESIDE, answers will be given through these columns free of charge. Where an immediate reply by mail is desired, the applicant should enclose a fee of one dollar, otherwise no attention will be paid to such a request. Inquiries should always contain the writer's full address. Queries must be received at least two weeks before the date of the issue in which the answer is expected. Subscribers may send their veterinary queries directly to Dr. H. J. Detmers, 35 King Avenue, Columbus, Ohio.

A Cribber.—G. A. G., Clotho, N. C. A confirmed cribber or wind-sucker is incurable.

Navicular Disease.—L. M., Clarksville, Mo. Navicular disease, especially if such an old case as yours, is incurable.

Thoroughpin.—J. M., Owen, Minn., writes: "My colt had a thoroughpin on it when it was foaled. What is best to do for it?"

ANSWER.—In a case like yours it is best to leave it alone.

Cough.—B. M., Ozark, Ark. You give only one symptom; namely, "a dry, hacking cough for some time," which, as I have repeatedly stated in these columns, is insufficient to base upon it a diagnosis. Consequently, I cannot tell you what to do for your dog.

Elephantiasis.—O. C. A., Wayville, N. Y. Elephantiasis, if of long standing, is incurable. For further information I have to refer you to the already numerous answers that have appeared under the above heading in these columns.

Distemper.—W. McC., Trumbull, Neb., writes: "My colt has had the distemper about six weeks, and just under the right eye there is a hard lump. It has not breathed through that nostril for two weeks. It is getting poor in flesh; it breathes hard, and sometimes can hardly get its breath."

ANSWER.—The best you can do is to employ a competent veterinarian. Such a case needs watching, and cannot be treated from a distance.

Coughing.—A. P. T., Tremaine, Neb. As I have repeatedly explained, coughing is a symptom of nearly every respiratory disorder. It is, therefore, utterly impossible to base a diagnosis upon that one symptom, especially if the quality of the cough, too, is unknown. If I take your question literally, my answer has to be: "Irritation of the larynx," but as an irritation of the larynx can have its source in a great many disorders, you would know just as much as before.

Paralysis.—A. A. S., Elwood, Neb., writes: "I have a yearling calf which has been lying down for about eight weeks, and cannot get up, except on its fore legs. It eats and drinks heartily, but it has completely lost the use of its hind parts."

ANSWER.—If your calf has been paralyzed for eight weeks, and if, as you say, the same "has completely lost the use of its hind parts," a recovery is impossible, and a treatment is out of the question.

A Ruptured Blood-vessel.—I. W., Jetmore, Kan., writes: "I have a pig with one ear swelled until it is as thick as it is wide. I stuck a knife in it, and there was a discharge of black blood, about one half a pint. I opened it every day for about two weeks, with the same result."

ANSWER.—Lance the ear again, and then fill the cavity with absorbent cotton saturated with a two or three per cent solution of pure carbolic acid, and renew this dressing once or twice a day until healing sets in.

Paralysis in Pigs.—R. T. M., Detroit, Kan. Paralysis of the hind quarters is a rather frequent disease in pigs, but is not always produced by the same morbid affection. In some cases it has its source in pressure by exudates or extravasated blood upon the spinal cord; in others it is caused by morbid changes in the spinal cord or its enveloping membranes, and in still others it is due to a degeneration of the muscles of the hind parts. Therefore, if another case occurs among your pigs, make a careful post-mortem examination, note what is wrong or abnormal, and report.

Malignant Wart.—N. H. W., Eminence, Kan. If the wart you complain of is one of the really malignant kind, nothing short of arsenic compound will remove it. The combination, however, is exceedingly poisonous and dangerous to handle. It, therefore, should not be applied except by a professional veterinarian. It may be, though, that the wart in question is not one of the most malignant type. In that case a noose made of a good "waxed end," if drawn as tight as possible around the base of the wart, will remove it, and if then, after it has been removed, a little finely powdered sulphate of copper (blue vitriol) is applied to the sore surface as a caustic, it probably will not return.

Ringbone.—D. F. D., Little Hocking, Ohio, writes: "I have a colt four years old, that has had ringbone in its fore feet for three years. Tried your recipe of biniodide of mercury and hog's lard, for two months, and think it was cured, as it was not lame for about a week after, but think it run too much, and has become lame again. Had I kept it quiet for a week or so longer, do you think the cure would have been permanent?"

ANSWER.—I suppose you are right. If the animal did not have strict rest for a sufficient length of time, no cure could be expected. The anchylosis produced must have time to become firm and solid. If it has not, any forcible movement is apt to cause a separation.

Abortion.—C. W. K., Miller, Dak., writes: "I am losing all my calves by their coming too soon. The cows were running on the prairie, where they got nothing to eat but grass, and had plenty of good water from a creek running through the range. After the first case, the cattle ran in the stalks a part of the time, and picked a little on flax stubble, and were watered from a well, where they crowded a good deal."

ANSWER.—It is possible that the cases of abortions have been caused by the frosted and rotten flax. If not, it must be supposed that they have been of an epizootic character. In such a case, the only remedy consists, as has been explained in recent numbers of this paper, in removing all the cows and heifers yet with calf, to a non-infected place, at least until the old premises where the abortions have taken place have been thoroughly disinfected.

Seemed to Want to Lick Everything.—R. J. E., Luling, Texas, writes: "What is the matter with my cow? Last night, when I went to milk her, she seemed to want to lick everything she could get at, and kept licking her tongue out all of the time. She would not

eat much. She staggered some when walking. She has a young calf about two weeks old. She is fat and in good condition. I gave her salts, and cut off about four inches of her tail."

ANSWER.—I cannot tell you what ailed your cow; it is very seldom that a diagnosis can be based upon one symptom, especially if the latter is of very little consequence. If you don't know what ailed her, why did you dose her with medicine, and cut off her tail? It is certainly not a very rational proceeding to give medicines to an animal and to perform a surgical operation, if one don't know what he wants to do it for. But since your cow has recovered, it don't matter much what ailed her.

Probably Pus in the Frontal Sinus.—C. M. F., Confidence, W. Va., writes: "I bought a yoke of oxen some two months ago. One of them had his horns bored for the hollow horn. A kind of milky water at times oozes out of his left horn, but when the gimlet hole gets stopped up, he throws his head about as if he had been struck in the eye, and in a few days the left side of his head swells very badly over the left eye. When I open the hole in his horn he gets relief."

ANSWER.—Employ a competent veterinarian to make a thorough examination of the frontal sinus, if necessary, by trepanation. The trouble, very likely, is caused by the boring of a hole into the horn, and by this opening the frontal sinus, a very foolish operation against an imaginary disease. If you employ a reliable veterinarian, he will know what to do further; that is, how to remove the morbid contents of the frontal sinuses, and to stop the reproduction of the same.

Dehorning.—M. E. W., North Granville, N. Y., writes: "I have a bull, three years old next July. I am very anxious to keep him another year, but fear he may become vicious. I have been thinking of dehorning him, and would like to know when it would be advisable. What preparation would you recommend to apply after sawing the horns off? There is no practical dehorner in this vicinity. I thought I could have my butcher do the work for me. Will you please give me what information you can in regard to the subject?"

ANSWER.—I regard dehorning as a cruel and useless operation, but if you desire to have it performed on your bull, I most decidedly have to advise you to have it done by nobody but a competent veterinarian, who will know not only how to stop the bleeding, and where to saw off the horns, but also how to dress the wounds in such a way that evil consequences will be avoided.

A Soft Swelling on the Knee.—J. N., Eden, S. Dak., writes: "About six weeks ago my two-year-old colt was cut just above the knee by the tusk of a boar. The sore healed, but left a soft lump extending over the cap of the knee. It seems to remain about the same and is not very sore."

ANSWER.—You say the swelling extends over the "cap" of the knee, consequently it must be on the hind knee, because what is called the fore-knee, a joint which corresponds to the wrist of man, has no cap. If my supposition is correct, you may succeed in reducing the swelling by repeated applications of tincture of iodine, or of an ointment composed of iodide of potassium and lard, 1:8, or of gray mercurial ointment. If you choose the latter, only very little should be applied at a time, but that little should be thoroughly rubbed in. One application a day is enough.

Dysuria.—J. E. M., East Portland, Oregon, writes: "I have a mare ten years old, which has great difficulty in voiding water. She seems to be constantly wanting to pass water, but is unable to do so for hours, sometimes. A friend advised me to give aloes. I gave a few small doses in cut feed and thought it helped her, but did not effect a cure. She keeps quite fat all the time, and eats heartily. I feed her cut hay mixed with shorts and bran, twice a day, and oats once. I have work for her only two or three days in a week. She gets fatigued easily when at work, and sweats easily."

ANSWER.—The trouble you complain of may be due to various causes. I, therefore, have to advise you to have the mare examined—that is, her bladder and its contents—by a competent person, either a veterinarian, or if Oregon is not blessed with veterinarians, by a physician. That your mare easily fatigues is probably due to want of exercise and too much fat.

Abscesses on the Hip.—J. R. Y., Savonburg, Kansas, writes: "I have a three-year-old filly, which I took from pasture last fall and commenced working her. She was fed on corn, and got very fat. About the middle of December last there came three lumps on her right hip; they got about the size of a quail's egg; they mattered and run out and then healed up. Then there came five larger ones near the same place; these have been on her three or four months. About a week ago some small ones also appeared. She is hardy and appears well otherwise."

ANSWER.—The formation of so many abscesses or boils looks rather suspicious. It, therefore, will be best that you employ a veterinarian to make a thorough examination. If the boils are common abscesses, they will be brought to healing if opened at the lowest point, and dressed twice a day with absorbent cotton, saturated with a three or four per cent solution of pure carbolic acid. Else, if the abscess cavities are not deep enough to be filled with cotton, iodoform, provided it is not too expensive, may be used.

Black Leg.—A. M., Naples, S. Dak., writes: "I had a cow and calf die recently. The cow became lame in the right shoulder, which finally swelled to an enormous size and she would not eat or drink. She was sick about



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twenty-four hours. She had her tongue out most of the time, and when she died her tongue was dark colored. A week from the time she died, her calf also died. It had the same symptoms."

ANSWER.—Your cattle died of black leg, black quarter or symptomatic anthrax. A treatment is seldom of any avail. The best preventive consists in keeping young cattle in particular away from such places where the disease occurs, also in not keeping them too fat, or rather, in not fattening them too suddenly. Another means of prevention consists in a protective inoculation. But as this is an operation which can be intrusted only to a competent and responsible veterinarian, it will not be necessary to describe it. It is self-evident that the milk of an animal sick with such a fatal disease as black leg—provided the secretion of milk does not cease—should not be used.

A Consequence of Dehorning.—J. D. M., Grand Island, Neb., writes: "I have a cow that has always been hearty and strong, and a regular breeder. Last summer it was noticed that she wheezed when she breathed. She has been getting worse ever since. When feeding, she frequently stops eating, opens her mouth, apparently to get her breath, and a rattling is heard, either in her head or throat. I cannot determine which. She eats heartily, and was in good flesh until she dropped her calf a few months ago; she is rather thin in flesh now. I can only account for the trouble in one way; that is, that she was dehorned a year ago, and may have caught a severe cold, though none of the others dehorned at the same time had any trouble of the kind. There is a slight discharge from one nostril. From this description can you tell me what to do for her?"

ANSWER.—The trouble is in the frontal sinuses, and a consequence of the dehorning operation. Employ a competent veterinarian, let him trepan the frontal sinus so as to get at the morbid changes inside, and to be able to treat and to remove them, as circumstances may require. Don't intrust a quack with the operation.

Lolls His Tongue.—M. H. S., Wyatt, S. D., asks: "How can I prevent my horse from lolling out his tongue? He is of a nervous temperament and pulls hard on the bit."

ANSWER.—Change his bit, and see what effect it will have. If, however, your horse is a confirmed loller, it will be difficult to break him of that habit. For further information I have to refer you to the answers given to similar questions in recent numbers of this paper.

Goitre.—J. M. G., Upper Alton, Ill., writes: "My horse has a lump on the right side of his neck just back of the jaw bone. It is inside of the skin alongside of the windpipe, as can plainly be seen. It has grown about one third, larger in the past year. Does it not interfere with his eating? He only eats three or four ears of corn at a meal, sometimes not that much. Bran, oats, oilmeal or grass does not tempt him. He will eat for awhile on grass, then quit eating. His teeth are all right. Will you kindly tell me what to do for him, as he is growing poorer all the time."

ANSWER.—The "lump" is an enlargement of the thyroid gland, which cannot be removed except by a rather dangerous surgical operation. The swelling does no particular damage, and is, therefore, best left alone. If your water is very hard, it may be best to give the horse soft water (rainwater) to drink. You may be a constant reader of these columns, but you are not a very close reader, otherwise, you would have noticed that the same question has been asked and answered before.

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B cautious, B prudent, B trustful, B true,
B courteous with all men, B friendly with few.
B cheerful, B grateful, B hopeful, B firm,
B peaceful, benevolent, willing to learn;
B courageous, B gentle, B liberal, B just,
B aspiring, B bumble, because thou art dust;
B penitent, circumspect, sound in the faith;
B active, devoted, B faithful till death.
B honest, B holy, transparent and pure;
B dependent, B Christlike and you'll B pure.

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MRS. MARY MILLER, of western Pennsylvania, probably the wealthiest colored woman in the country, died the other day. Her income was \$200 a day. Four years ago she owned a barren piece of ground, but there was oil beneath its surface, which made it oil right.

A FARMER and his wife, on their first visit to the capitol at Montpelier, Vermont, paused before the statue of Ethan Allen. They gazed long and thoughtfully at it, till finally the silence was broken by the husband. "Well, mother," he said, "I allus thought Ethan Allen was a hoss."

BE sunshiny. There is nothing in the world so helpful as cheerfulness. What a wonderful power for good there is in a happy face! One instinctively feels that happiness is never far from truth. The face that shines must have something behind it to make it shine, and there is no real sunshine of the soul except truth and goodness. Other lights are transitory and fitful; but the sweet, steady light of a true soul beams upon the face like the joy and peace of a summer day.—*Zion's Advocate.*

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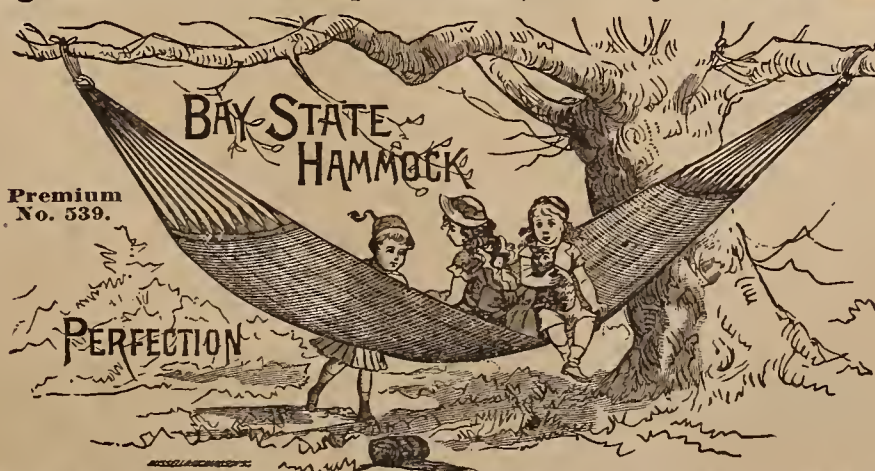
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ALPHA, IND., May 14, 1890.

I received the Peerless Atlas and am well pleased with it. I take pleasure in saying that it is worth \$50.00, compared with one I paid \$10.00 for. All who see it say they would like to have one. It is the thing every family ought to have. M. M. TOBIAS.

WINSTON, N. C., April 24, 1890.

Have received the spoons and they are fine; also "Christ Before Pilate," and would not take \$12.00 for it. MRS. LIZZIE TOLIVER.

CORSCANA, TEXAS, May 15, 1890.

The picture, "Christ Before Pilate," came to hand to-day in good condition. It could not be duplicated in this market for fifteen dollars. H. R. THORP.

AMARILLO, TEXAS, March 4, 1890.

The Atlas is at hand. It is the most complete and valuable work of its kind that I have seen. I would not take five dollars for it. C. M. HAYHURST.

NEW HARTFORD, N. Y., March 12, 1890.

The Peerless Atlas arrived in good order. We think it is just as good as one we should have to pay eight or ten dollars for. MRS. S. A. DURRANT.

EVANSVILLE, IND., May 9, 1890.

We received that beautiful picture, "Christ Before Pilate," and think it a wonderful work of art. Would not take \$10.00 for it if we could not get another. We also received the hooks in good order, and they are what you claim them to be. MRS. A. W. LOCKYEAR.

NORTH HENDERSON, ILL., May 5, 1890.

Received the Peerless Atlas; am well pleased with it and find it of great value in school work. SOPHIE M. COULSON.

CHEBANSE, ILL., May 10, 1890.

I received the picture, "Christ Before Pilate," the Teaspoons, Butter Knife and Sugar Shell. I find them all they were claimed to be, and am very much pleased. C. CHRISTENSEN.

WALDECK, TEX., April 22, 1890.

I received Premium No. 686, and would not part with it for \$100.00. FRED SPECKLE.

MISSOURI, CITY, Mo., May 18, 1890.

I have received the Peerless Atlas, and allow me to say that it is a perfect library of knowledge, in a geographical sense. Every school-boy in the land should possess one. The maps alone are worth the money you ask for the atlas. Also received the picture, "Christ Before Pilate." It is a beautiful picture and much better than the one sent out by other publishers. J. W. MOORE.

CENTRE SQUARE, PA., April 29, 1890.

The "Peerless Atlas" received in fine condition. It is fully worth the small price you ask for it, and more, too. It contains much valuable information, not only of geographical interest, but many facts with which many are not conversant. The "Civil Service Rules," "Rates of Postage," "Homestead Laws" and "Legal Holidays," in connection with the superb colored maps and engravings, make it a useful and ornamental addition to any library. This is the eighth book which I have received from you, and am highly pleased with each one. G. N. CHAPPELLE.

CENTER POINT, W. VA., May 5, 1890.

We received the Sewing Machine, the Atlas and the papers in good order. The atlas is the best I ever saw. It is worth \$5; I would not take less and do without it. Many persons say they intend to have it. The sewing machine is far better than we expected. My wife is delighted with it; it works like a charm. It is equal in every way to machines bought by our neighbors for \$50.00. I consider that we have received fifty dollars worth of goods for the fifteen dollars sent. Many thanks for your kindness, your promptness, and for the fair, honest way you have dealt with me. I am a hard-working farmer and it gives me great pleasure to deal with good men. May you live long and always prosper in business. J. W. HAWKINS.

BELLAIRE, OHIO, March 8, 1890.

I received the Handy Horse Book last week. Many thanks for it. It is far better than I expected. REUBEN HARRIS.

CELINA, OHIO, March 3, 1890.

I received the Silver Plated Teaspoons, Sugar Shell and Butter Knife all in good order. Am very much pleased with them. Would not take a dollar for them alone if it were impossible to obtain another set like them. ANNA E. SNAVELY.

ENGLEMAN, VA., March 1, 1890.

The Stamping Outfit just received. Am very much pleased with it. E. B. KIRKPATRICK.

ARCADIA, NEB., March 7, 1890.

I received the Peerless Atlas and the picture, "Christ Before Pilate," and am well pleased with both. Was offered a dollar for the atlas, and my father, who is an old teacher, says it is the best atlas he ever saw. CLARA F. EASTERBROOK.

Smiles.

A WAIL OF TOE.

A little corn on a maiden grew,
Listen to my wail of toe,
Caused by the pinch of a too-tight shoe,
Instead of a three a number two,
It grew, it grew,
Listen to my wail of toe.

As time went on (as time will do)
Listen to my wail of toe,
The corn waxed red—the maiden blue,
'Twas ten times worse than the grip (kerchew),
Too true! too true!
Listen to my wail of toe.

She had a seat in the end of the pew,
Listen to my wail of toe,
And a man, with another seat in view,
Put his cow-hide boot on her kangaroo,
Oh, whew! Oh, whew!
Listen to my wail of toe.

—Washington Post.

A FORCED CONFESSION.

"Were you ever engaged in a train robbery?"
asked the prosecuting attorney, looking at him keenly.

"I was never indicted for train robbing,"
answered the witness evasively.

"That is not the question," said the lawyer.
"I will ask you again: were you ever a train
robber?"

"Judge," said the witness, turning imploringly
to the dignitary on the bench, "must I
answer that question?"

"You must," answered the judge. "And
remember you are under oath."

The witness turned pale, and his knees
knocked together.

"I suppose it's got to come out. I sold books
and bananas on the cars for a whole year
when I was a young fellow," faltered the mis-
erable man.

LITERARY NOTE.

Friend—"How are you coming out?" Author—
"Good. I've got the material on hand for a
first-class novel." "You are a lucky man."
"That's not all; I've got the material for a
splendid comedy, besides." "You are for-
tunate." "Yes, all I need now is the material
for a new pair of pants."—*Texas Siftings*.

HE WAS SURE OF IT.

Lady customer (angrily)—"I believe there is
water in your milk, sir."

Honest Milkman—"Yes, madam, there is. I
have on several occasions urged the cows to
be more careful, but they insist that it is im-
possible to make milk without water."

HER STRONG ENDURANCE.

"Your friend seems to be a woman of strong
endurance."

"She is, indeed! You know that good-for-
nothing husband of hers?"

"Yes."

"Well, she's loved him all his life."

HE TRIED TO FILL HER PLACE.

"My wife is a great and noble woman, of
wonderful domestic endowments."

"Why this sudden advance in your estimate
of her?"

"She left me to take care of the children a
couple of hours yesterday."

A MORE IMPORTANT CASE.

Hackman—"Is the doctor at home?"

Bridget—"Yes, sir; he's out in the back yard
killing a chicken."

Hackman—"Call 'im in, I've got bigger
game."—*Puck*.

TRUTH IS MIGHTY.

Jawkins—"Good gracious, Jabez, you're all
broke up. Where did you get that black eye?"

Hogg—"Oh, dat was only a little linguistic
difficulty. I called a few things by their
wrong name."—*Texas Siftings*.

A NEW CHEESE.

Diner—"Waiter, this is indigestible cheese,
isn't it?"

Waiter—"Yes, indeed, sah. Dat am de pure
indigestible, jes' in from de factory."

BRAIN SHRINKAGE.

Physiologists say that the older a man grows
the smaller his brain becomes. This explains
why the old man knows nothing and the
young one everything.—*Boston Courier*.

A YOUNG FINANCIER.

"Say, mamma, how much am I worth?"

"You are worth a million to me, my son."

"Say, mamma, couldn't you advance me
twenty-five cents?"—*Time*.

GOOD NEWS FOR THE DEAF.

At the convention of physicians held in
Kaos City, the committee appointed from
members of the different societies to investi-
gate and report upon the most practical and
reliable artificial means for relieving deaf-
ness, have reported unanimously upon the in-
visible device of H. A. Wales, of Bridgeport,
Conn., known as the Sound Disc, which con-
centrates the wave sound.

A PHILANTHROPIST'S GIFT TO CONGRESS.

"Put those in the members' boxes," said an
old man, staggering up to the window of the
house post-office the other day with an im-
mense bundle of pamphlets. "Put a hook in
every box. Be sure you don't miss any."

"What are they?" asked the young man at
the window. "We can't take it unless it is
something that the members are likely to
want."

"Want? Why, man alive, they must have
it. Just let me tell you what it is." He leaned
forward and whispered something in the
young man's ear and then stepped back to
give him room to expand his astonishment.
"Yes, sir, the brain! It is a treatise on the
development of the brain. Why, man, the
reputation of the nation depends on their
having it at once!"

The clerk tapped his forehead with his finger
and laid the bundle aside for distribution.—
Washington Star.

TOO CHEAP.

"Papa," cried a little seven-year-old, "I want
some money to get—"

"Don't go any further," he interrupted,
throwing down a coin.

The child came slowly up to him, after pock-
eting the money, and barely touched his cheek
with a kiss.

"Humph," ejaculated the parent, "from the
kiss you give I should judge that you don't
appreciate it very much."

She caught hold of his hands, and looking
squarely into his eyes, solemnly said:

"Do you expect a \$10 kiss for 50 cents?"—
Atlanta Constitution.

A COMBINATION.

"You see those two men coming down the
street?"

"Yes."

"Well, one is a janitor of an apartment
hotel and the other is a criminal detective."

"That so?"

"Yes. What a splendid musician they
would make in combination."

"How do you make that out?"

"Why, one is familiar with the flats and the
other with the sharps."—*Boston Courier*.

A JOB FOR AN EXPERT.

"Is there anybody from Vermont in the
cars?" asked the conductor, opening the door
and letting in about forty-two rods of western
blizzard.

"I be," responded a tall, lank individual,
rising up in a seat next to the stove.

"Well, if you will be kind enough to come
forward into the Pullman car," replied the
conductor, "there is a lady there who has got
her spruce gum mixed up with a paper of
rosin and she wants an expert to separate
'em."—*Burlington Free Press*.

BIT IT IN TWO.

One of our associates, riding on a street-car
the other day, saw a woman give the con-
ductor a quarter of a dollar. He passed it
back, saying, "That isn't good." The woman
became very angry. "Why, marm," said the
conductor, "I can chew that up like a quarter
of a pie." "You may if you can," replied the
woman. Whereupon he calmly bit it in two,
and remarked to our friend: "I hite two or
three a day; a fellow has to keep his eye teeth
cut here."—*Boston Courier*.

TAKEN AT HIS WORD.

Mrs. Slimdiet (the landlady)—"Can you tell
me the difference, Mr. Slowpeigh, between a
beefsteak and a shingle?" Slowpeigh (dlat-
tered)—"Er, I can't say that I do, ma'am."
Mrs. Slimdiet (contemptuously)—"Mary, see
that Mr. Slowpeigh is served with a broiled
shingle each morning. There's no use wasting
any more good victuals."—*American Grocer*.

CLINCHING EVIDENCE.

Fond father—"How am I to know, sir, that
you are what you represent yourself to be, a
count?"

Count Chasyerself—"These papers will show
that I am in debt for several million."—*Time*.

THE CHIPS VERY PATRIOTIC.

Englishman—"What is your national game?"

Kentuckian—"Poker."

"Why, is that purely an American game?"

"Yes, sir! Why, even the chips are red
white and blue."

THE RIGHT CLUE.

"The cat drank all the milk."

"Did you see her?"

"No; Johnny told me she did it."

"Don't touch the cat; go and catch Johnny
for me."

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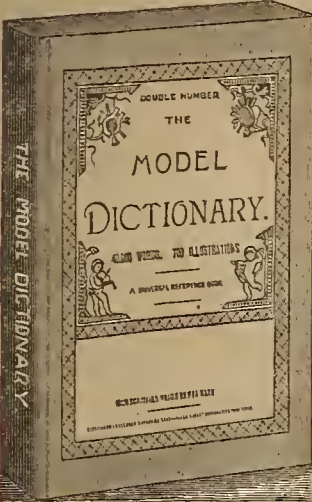
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VOL. XIII. NO. 18.

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Current Comment.

A SUBSCRIBER sends us the particulars of a hedge fence scheme that is being worked in his county, which he considers a great swindle. A company, including a few prominent farmers for the sake of appearances, was formed for the purpose of constructing hedge fences under contract. The company furnishes the plants, sets them out and gives the hedge a little attention for two or three years. The stockholders are solicitors and get large commissions on all contracts they make. The farmer prepares the ground, cultivates the plants, and, in fact, does about nine tenths of the work of growing the hedge, and then in addition to this, pays the company about three or four times what it is all worth. Under the contract he is held liable for payment, but if the company dissolves, he has no recourse; it is a one-sided affair. If a farmer wants a hedge fence at all, there is no reason why he should employ such an expensive method. Let him buy his plants of a reliable nurseryman, set them out himself and care for them, without having anything to do with any such hedge company. If he wants it wired according to any special or patented method, it is time enough to see to that after the hedge is grown. Do not confound these upstart companies with some reliable hedge companies that have been long established. There are some such and they do all they agree to do and give perfect satisfaction to their customers. Their prices are high, but they fulfill their contracts to the letter, and at the end of the period specified turn over to their customers a first-class hedge fence. The farmer, however, can grow one for himself a great deal cheaper, if he will only do it.

THE offer of the Louisiana Lottery to pay the state \$1,000,000 annually for a renewal of its charter, ought to open the eyes of all the people of this country to the fact that it is nothing but a scheme for robbing them. It may be conducted fairly enough, but the lottery itself is a steal. To illustrate: Suppose the prizes for a drawing amount to \$250,000. Then if one were to buy all the tickets, he would draw the whole amount. But the tickets for this drawing would cost him \$500,000. Every dollar drawn would cost him two. So every one who invests in this lottery is gambling with the odds two to one against him. Even if moral reasons have no weight with a man, ordi-

nary common sense should prevent him from gambling on such terms. Aside from the strong moral reasons against gambling, a lottery may be fair or unfair. It is fair when the chances of winning are equal to the chances of losing. It is unfair when the chances of winning are not equal to the chances of losing. With this lottery there are two chances of losing to one of winning. It is a scheme by which a few win, many are robbed, and the company realize immense profits. What these profits are may be judged by the offer of a million dollars a year to a state for the privilege of carrying on within its borders a scheme for robbing the people all over the country.

Gambling is a great and widespread evil. It appears among all classes of society and in many different forms. Its victims are numbered by legions. It is often disguised, and the disguise adds to the danger, as in stock and grain speculations, where the victims deceive themselves that speculation on margins is a legitimate business, instead of betting on the future price of grain and stocks. The passage of a stringent national law against dealing in options and futures and all other similar forms of gambling, would prove a great benefit to the country. Gambling creates no wealth, but it is a heavy tax upon the productive industries of the country. It is plain to every one who will give the subject a little reflection, that the living, the winnings and the stealings of the professional gamblers and speculators must come, in the end, from the earnings of honest labor. It is impossible to estimate the extent of the evil effects of gambling, but it is one of the most potent causes of hard times. Strict enforcement of stringent laws will abate this evil, that is one of the most insidious enemies of society.

IN the midst of the discussion about the prevailing agricultural depression, it is refreshing to read the prediction that the time is near at hand when the farmer will be prosperous. In a May *Forum* article the ground is taken that the absence of prosperity among farmers is largely due to excessive production of nearly all farm products. Statistics show that for a long period of years production increased much faster than the population. The writer assumes that the farmer can hope for prosperity only when the balance between production and consumption has been restored, and domestic consumption shall absorb nearly all his products. "Assuming," says the writer, "the population to be now 65,000,000, with the area in cereals producing average crops, and current consumption fifteen per cent greater, per capita, than in the five years ending in 1874, present supplies are in excess of population as follows: Corn for 5,000,000 people, wheat for 14,000,000, cattle for 6,000,000, and swine for 11,000,000. Should population continue to increase as heretofore, and production not increase more than seems probable, home requirements will absorb all food products before the end of the century." A review is given of the area of production of the principal crops, and it is shown that the balancing process between production

and consumption is already at work. The corn area is approaching its limit, the rate of increase during the past three years being very small; by 1895 the probable area under cultivation will just about supply the demand. The wheat area during the past five years has decreased; it seems to have reached and passed its limit. Within five years the supply of wheat will not exceed the domestic demand. This will be a most important change, since wheat is by far our most important cereal export.

In regard to the rate of increase of cultivated acres, the writer says: "Upon the assumption that the requirements are now such as to employ 3.15 acres per capita to produce the cereals, potatoes, hay, tobacco and cotton consumed at home, and the tobacco, cotton and animal products exported, the statistics show that the troubles of the farmer may be attributed to the bringing of too many new acres into cultivation in the fourteen years ending in 1884; and that the process of readjusting the disturbed relations between production and consumption has been in operation several years, as is clear from the rapidly diminishing quantity of new land being employed in the production of staple crops."

In conclusion, he says that, assuming the substantial correctness of the estimates of area by the Department of Agriculture, and that home requirements will be such as to employ 3.15 acres per capita, the answer to the question, "When will the farmer be prosperous?" resolves itself into a calculation as simple as the following: January, 1894, a population of 72,000,000 will require in staple crops an area of 226,800,000 acres; area now employed in growing such crops, 211,000,000; additions to be made to such area in four years, 12,000,000; acreage deficit, January, 1894, 3,800,000 acres. This deficit should be sufficient to neutralize any possible underestimate of the area now in cultivation. Therefore, he claims that the evidence adduced shows that before this decade is half spent, all the products of the farm will be required at good prices, that lands will appreciate greatly in value, and that the American farmer will enter upon an era of prosperity, the unlimited continuance of which is assured by the exhaustion of the arable areas.

LAST year, when restrictive legislation against dressed beef was under discussion, and prohibitory laws were passed by several states, FARM AND FIRESIDE took the ground that it was a waste of good ammunition to be fighting the dressed beef business instead of the "combine" that was trying to monopolize the business. The business of shipping dressed beef from one state to another is all right, and restrictive legislation, ostensibly in favor of local cattle growers, but really in favor of the local butchers, is wrong. Besides, the enactment of live-stock inspection laws, although preventing the importation of dressed beef, would not relieve the farmers of eastern states from the competition of western beef, as long as western live cattle had free access to their markets. Just as might have been expected, the state live-

stock inspection laws were decided by the courts in Indiana and Minnesota to be unconstitutional, on the ground of interference with interstate commerce. Last month, on an appeal carried up from Minnesota, the supreme court of the United States sustained the opinions of the lower courts, giving the decision that the inspection law of that state was unconstitutional. Months have been wasted fighting a legitimate business that should have been spent fighting the Chicago combine. The attack was diverted from its true object by local butchers in their own interest, and not in the interest of either the producers or consumers of beef.

MUCH has been written about the causes of and remedies for agricultural depression, but the fact is, says a subscriber with plain, common-sense views, that there would be much less cause for grumbling about hard times among farmers if they had kept out of debt. The pay-as-you-go plan would have kept them free, independent and contented, and free from being grumbling slaves to debt.

Since over ninety per cent of the men who go in business fail, it is little wonder that so many farmers do not realize what they expected from the investment of borrowed capital. Where ten men invest borrowed money and succeed, ninety men fail. And the ninety who fail are the ones who rush recklessly into debt, and afterwards grumble at what was brought about by their own lack of foresight and business capacity. Crawl out from under that mortgage, and then keep out.

ONE of the officers of the Philadelphia Master Builders' Exchange, after spending several months in Europe making labor investigations, describes the condition of the European mechanic as follows, in *Carpentry and Building*:

The mechanic of Europe is a laborer; he looks like a laborer, and I certainly felt proud of being an American mechanic when I understood his condition. The methods of European workmen are sometimes different from those of workmen here. In many trades they are artists. The stone masons and plasterers, in particular, are artists, but in Salsburg I saw them trudging along, wheeling their tools in hand-carts. In San Remo I saw them handle stone in a curious way. Four men would lift a stone of great weight and set it on the head of a fifth man, who would carry it to the point on a level, or to the floor of a building where it was to be laid, and then four other men would remove it from the head of the carrier, and set it in its place. All through Germany and Austria I saw women mixing and carrying the mortar for the masons and bricklayers. They do not use hods, but a kind of a tray, which they carry on their heads. In Zurich I saw a peculiar style of pile driving. The weight was hauled up by a rope, drawn hand over hand, by a gang of men, who would let go the rope when they wanted the weight to drop. This method did not work as well as ours. In Munich I visited one of the beer gardens frequented by workmen and talked with an intelligent stone cutter. He said the workmen rarely had meat to eat more than once a week. Their dinner consisted of their beer, a little brown bread and sausage. The beer cost them two cents a gallon, and they drank it quietly at work or at dinner. I saw no disorder whatever among them, and, in fact, saw but three drunken men during the whole time I was in Europe.

FARM AND FIRESIDE.

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advertised in several papers.

Our Farm.

COMMERCIAL FERTILIZERS.

BY JOSEPH.

PLANT FOOD NOT STIMULANTS,
MERELY.—The old notion that
commercial (that is, concen-
trated) fertilizers, such as are
bought in bags and barrels,
are nothing more nor less
than stimulants, and while
they may help the crop to
which they are applied, they, at the
same time, impoverish the land instead
of making it richer, as does barn-yard
manure—this old notion, I say, is so
firmly fixed in the minds of a large
number of farmers that we will have
to do a good deal of writing, talking
and demonstrating before it can be erad-
icated. One great trouble in this connec-
tion is the lack of knowledge we find
among farmers of the first principles of
crop feeding, and sometimes it seems to
me that even the more advanced of soil
workers have not as clear an insight in
this important matter as they ought. At
least, I cannot account in any other way
for much of the advice in regard to com-
mercial fertilizers offered by some of our
most intelligent writers and tillers of the
soil. Some of the horticultural lights are
in the habit of recommending bone dust
for garden crops, at the rate of one half of
a ton to an acre. This material being a
one-sided manure, chiefly a phosphate, will
do well enough for land that is also one-
sided and deficient in phosphoric acid,
but it will not give benefits correspond-
ing with its cost on a great many other
soils. Of course, the little nitrogen which
is contained in the bone dust will be apt
to exercise some effect on most garden
crops, but it is not likely that the large
quantity of phosphoric acid contained
in so much bone dust can be utilized to
any great extent. When one of the
doubting Thomases among the farmers,
induced by the advice of such experts as
Peter Henderson, Francis Brill, etc., who
have seen good results from bone dust on
their land, at last, and perhaps reluc-
tantly, gives bone dust a trial, and finds
it gives him so little good for his money,
he will certainly be more convinced than
ever that fertilizers are a stimulant and
nothing more, and that all writers who
have recommended them are subsidized
by the fertilizer manufacturers, as one of
the subscribers of FARM AND FIRESIDE
states in a letter now before me.

I was astonished to see Prof. E. S. Goff,
in a communication to a western paper, I
think, fall into this same error. He was
giving his ideas how to utilize a piece of

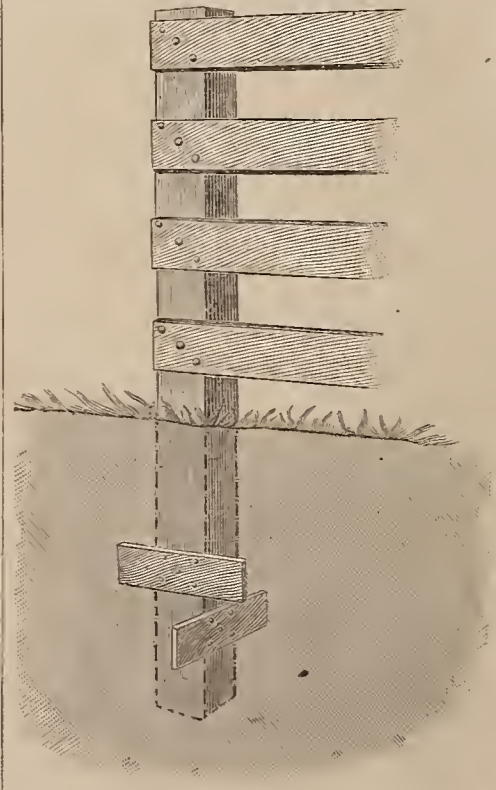
reclaimed low land for onions and celery,
and advised to apply not only about 120
loads of good compost per acre, but in ad-
dition half a ton of bone dust. Now,
what effect will this bone dust have on
land so plentifully provided with good
manure? Not much, I fancy. Had he
given the advice to apply a little nitrate
of soda on the onions very early in the
spring, I would have looked for more de-
cided results. It is true, however, that
the mineral elements of plant food are
just the ones needed for peaty soils, and
also that the compost is likely to contain
twice as much potash as phosphoric acid,
and that at some future time the applica-
tion of some phosphate would have been
entirely proper; but a dressing of 120
loads of compost, with its 500 pounds of
phosphoric acid, certainly furnishes a
number of times as much as any crop
could possibly utilize. The nitrate of
soda also could do good only in very early
spring, before the vast store of that el-
ement contained in the compost and in the
peaty soil itself could be made avail-
able. Perhaps a dressing of lime might
do good service, but it would be cheaper
to apply it in a cheaper form of lime than
in that of the costly bone dust.

Another reason why we make so slow
headway against the old notion of the
stimulant nature of fertilizers, is that
many farmers expect too much of it from
the start, and are apt to compare the re-
sults of a dressing of 200 pounds per acre
of some \$30 phosphate with a fair dress-
ing of stable manure. They evidently
think that \$3 worth of fertilizer ought to
give the same increase of crop as a \$25
dressing of barn-yard manure. This it
will not always do, except when soil and
fertilizer are both one-sided, and the de-
ficiencies of the former is just met by the
latter.

On the other hand, we should not over-
look that even the heaviest dressings of
the best fertilizers will seldom give us
very striking results the first season on
land that is entirely worn out and de-
prived of its humus. The soil should and
must have carbonaceous (decaying vegeta-
ble) matter. Where that is entirely miss-
ing, the soil hard and dry and baked, we
should first counteract this by additions of
humus, either in barn-yard manure, peat,
or by growing black peas, or clover, etc.,
to plow under before we can hope to have
much satisfaction from the use of com-
mercial fertilizers.

SETTING FENCE POSTS.

A friend sends a description of his way
of setting fence posts so that they cannot



be heaved out by the frosts. Solid blocks
are nailed on the bottom of the post, as is
shown in the illustration.

LOVE, W. VA., March 29, 1890.

I received your premium Sewing Ma-
chine, No. 120. It reached me in good
order, and I can say I am entirely satis-
fied with it. It is as good, if not better,
than machines sold here for \$45.00. Accept
my thanks. JOHN. J. PATTERSON.

See our offer of the Sewing Machine on
another page.

ON ADULTERATION OF FOOD.

BY H. A. WEBER.

[Continued from last issue.]

IF a sample of butter and oleomargar-
ine of about the same quality are
subjected to chemical analysis, and
the fat in each case determined as a
whole, the two articles will indeed
show no greater difference in com-
position than would
naturally be expected
from the analysis of two different samples
of the same article. The following average
analyses will illustrate this point:

	Butter.	Oleomargarine.
Water.....	8.10	8.30
Protein (cured).....	1.00	.80
Salt.....	1.90	1.83
Fat.....	89.00	89.02
Total.....	100.00	100.00

Salt, water and protein must be consid-
ered as merely accidental ingredients, both
in natural and artificial butter. The food
value of both kinds of butter depends
entirely upon the fat contained in them,
and any difference in the chemical nature
of the two commodities must necessarily
be looked for in the respective fats. If
we compare the composition of butter fat
and oleomargarine fat, leaving out of con-
sideration the small amounts of volatile
acids which all fats other than butter
contain, we will find a remarkable differ-
ence, as will be seen from the following
average results of analysis:

Butter fat.	Oleomargarine fat.
Stearine, palmitin and olein.....	92.20
Butyric.....	7.80
	100
	Trace.

The simple fats, stearine, palmitin, olein
and butyric, are compounds of fatty acids,
stearic, palmitic, oleric and butyric, with
a triatomic alcohol radical, glyceryl. Of
these acids, the first three, stearic, palmitic
and oleic, are insoluble in water, while
butyric acid is very soluble. In regard to
the content of fatty acids, the two kinds
of fat can be represented as follows:

	Butter fat.	Oleomargarine fat.
Insoluble acids (stearic, palmitic and oleic).....	88.00	95.00
Soluble acid (butyric).....	7.00	Trace.

Butter differs from other animal and
vegetable fats which are employed as
butter substitutes, in containing so large
a percentage of soluble or butyric acid.
Thousands of analyses of butter made in
this and other countries in the last few
years show that the content of this acid
varies between very narrow limits, and
furnishes to the chemist one of the
surest means of distinguishing between
genuine and adulterated butter. But what
is of much greater importance to the con-
sumer is the fact, established by observa-
tion as well as by recent experiments, that
natural butter is the most digestible of
all animal and vegetable fats, with the
exception of cod-liver oil and other fish
oils. These latter fats, however, are never
employed in the manufacture of oleo-
margarine.

Fat in some form or other is a necessary
ingredient in a perfect food. The diges-
tion of fat differs from that of the other
components of food, protein, carbohydrates
and salts. Unlike these, it does not enter
into solution, with the exception of a
small portion that is changed into soap by
the action of the alkaline pancreatic fluid
upon the free fatty acids derived from the
fats, but it is absorbed in the form of an
emulsion.

The easy digestibility of fish oils, which
alone contain free, fatty acids in their
natural state, as well as that of cooked
animal and vegetable fats, which, through
the high temperature employed in the
preparation of food are always partially
decomposed into free, fatty acids and
glycerine, point unerringly to the view
concurrent in by all authorities on physi-
ological chemistry, that the presence of
free, fatty acids, and their subsequent con-
version into soap by the action of the
pancreatic fluid, aid, more than anything
else, in the emulsion and final absorption
of fats.

As already indicated, beef fat and hog
fat, which at present form the basis of arti-
ficial butter, are neutral fats; that is, in

their natural state they contain no free,
fatty acids. In the rendering of these fats
for production of artificial butter, the
temperature is intentionally and neces-
sarily kept so low that no decomposition
of the fats occur. Fresh butter is also a
neutral fat. From this it will readily be
seen that the comparative digestibility
and wholesomeness of these two kinds of
butter depend upon the facility in which
they yield to the process of digestion and
furnish the necessary free, fatty acids.

There is a general law in chemical
science that the more complex the nature
of bodies, the more easily they are decom-
posed. Of all fats occurring in nature
which are solid at ordinary temperatures,
butter fat is the most complex, in that it
contains, as already shown, seven and
eight tenths per cent of butyric peculiar
to itself, and hence we may properly con-
clude that butter fat, both in and out of
the system, will more readily split up into
glycerine and free, fatty acids than any of
those fats employed as butter substitutes.

Again, it has been shown that at the
temperature of the stomach, butter speed-
ily fuses to a limpid liquid, and oleo-
margarine does not. If the two kinds of
butter were equal in every other respect,
the infusibility of oleomargarine would
show its inferiority, since this property
would not only retard the action of the
digestive fluids upon the oleomargarine
itself, but also upon the other foods with
which the oleomargarine was mixed.

Mege Mouries, the inventor of oleo-
margarine, claimed that in his process he
imitated the production of butter in the
organism of the cow. Recent chemical
investigations have proven beyond a
doubt that this view was utterly erroneous.
All oleomargarine, whether it is made by
the French or any other process, is simply
a neutral fat, deficient in butyric. The
Frenchman employed the caul fat of
beaves exclusively for the production of
his artificial butter. But at present the
manufacture of this commodity is far in
advance of the original process in this
respect. Now the fats from all parts of
bodies of both heaves and swine, includ-
ing the intestinal fats mixed with filth,
blood, flesh, and even with portions of
the intestines themselves, enter the oleo-
margarine vats. If this heterogeneous
mass were heated to the temperature at
which lard and tallow are ordinarily ren-
dered, or if the product were thoroughly
cooked before it was consumed, the objec-
tions to it, in a sanitary point of view,
would not so rigidly obtain. But neither
assumption is true. The most of oleo-
margarine, like butter, is eaten raw, and
in rendering the fats for the production of
neutral lard and oleo, which are employed
in various proportions in artificial butter,
the temperature at which disease germs,
if present in the raw material, would be
surely destroyed, is never reached.

That diseased animals escape detection
among the many thousands that are daily
killed at the immense stock-yards of our
great cities, cannot be denied, and from
these sources the bulk of fats are drawn
which enter into artificial butter. We
can readily see that in this respect again
oleomargarine is a menace to public health.

In addition to these considerations, it
may be well to state that none of the
articles enumerated in the first category
of adulterations are actual necessities.
The demand for them is an artificial one,
induced by the great profits to the man-
ufacturer and dealer, and created by mis-
representations as to their quality, to the
detriment of the consumer and the pro-
ducer of the genuine article.

The arguments here presented may not
be deemed sufficient to prohibit the man-
ufacture and sale of the commodities in
question, but it seems that a long-suffering
people have ample reasons to demand
from "the government of the people, by
the people and for the people" that these
have counterfeits, by every legitimate
means, be brought upon the market in
such a form that the consumer could
recognize them when he sees them.

The second group of adulterations
enumerated above; namely, the addition
of foreign substance for bulk and weight,
are usually considered by all concerned
simply in the light of frauds. From the
legislature and justice down, and sophis-

ticator up, the sanitary aspects of the practice are almost entirely ignored.

In most cases it is true the adulterations coming under this head are harmless; but by no means is this the general rule. The addition of water to milk, for instance, deserves more than the passing notice given it above, and should be condemned for much more weighty reasons than the fraud perpetrated upon the pocket-books of the consumers. From a sanitary point of view this disgraceful practice constitutes a serious crime against the public, and we would fail in our duty to the public if we should refuse to consider here the grounds upon which this opinion is based.

Medical science has shown in recent years that epidemic diseases are caused by specific organisms, or germs, which invade the systems of those attacked. Surface water and sewage have been found to be the media through which the disease germs are disseminated. Hence, wells which are so located and constructed as to be contaminated with surface water or sewage, are sure to contain these germs when an epidemic disease is prevalent in the neighborhood. These minute organisms multiply very rapidly when they enter a medium suitable to their life and development. Milk is such a medium. Hence, milk which has been contaminated with impure water, may, in the course of twelve to twenty-four hours, contain enough of the disease germs to cause sickness and death, even when the use of the water with which it was contaminated would not produce the same effects.

It is well known that wells located in barn-yards so as to be contaminated with surface drainage are absolutely filthy, although the water may appear clear and bright. The same may be said of ordinary rain-water. It is not presumable that a person who adds water to milk for fraudulent purposes would be overscrupulous as regards the condition of the water employed. Putting all these facts together, it becomes apparent that the addition of water to milk is fraught with imminent danger to the health and life of the consumer.

The addition of skimmed milk to sweet milk is also a vicious practice, from a sanitary point of view. Only the other day, in this city, where the law against the selling of adulterated milk has been rigidly enforced for the last few years, where we have a milk inspector who is continually looking after the condition of milk sold, and where we have the state dairy and food commissioner, who is ready to prosecute any violation of the law to the fullest extent, a man was arrested for selling milk which contained but one and one fourth per cent of fat, whereas it should have contained at least three and a half to four per cent.

It is customary in feeding cows' milk to infants to dilute the same with about an equal volume of water, in order to reduce the amount of fat to the neighborhood of two per cent, supposing, of course, the milk to be normal. Now, if this adulterated milk were diluted in the same way, it would contain only the fractional part of one per cent of fat. Such a mixture would not properly support the life of a healthy child, much less would it suffice to keep body and soul together of little sufferers who have to contend with other ills incident to human life.

The misery which this widespread practice produces in every city and town of the land; the baffled efforts of family physicians, who in the fulfillment of their duties sacrifice every personal comfort to relieve the sufferings of their little patients; the anguish and heartaches of loving and confiding mothers, who, through many a weary night watch and pray at the bedside of their tender offspring; the doubts that arise in the hearts of stricken parents in the existence of an all-wise Creator, when in spite of every effort on their part they see the dearest object of their life relentlessly torn from their arms; all this to satisfy the mercenary greed of man, presents a picture too terrible to contemplate. The man arrested for this offense paid his fine of fifty dollars and costs without attempting a defense, and the ends of justice were attained.

Our judges are no doubt right in disre-

garding evidence of this kind when a criminal is before them on trial, but to persons who are interested in public welfare, and who are not clothed in the judicial robe, this fine seems to be a travesty upon justice. Penitentiary for life would be considered as the only adequate punishment for this reckless, vicious and criminal assault upon the life and happiness of human beings.

The utter disregard for human health and life on the part of sophisticators of commercial food products may be exemplified by the condition of cream of tartar recently investigated by the state dairy and food commission. All of the samples were purchased in open market at grocery and drug stores, wholesale and retail, at the uniform price of sixty cents a pound, and with the assurance that they were perfectly pure. In order to remove any suspicion of exaggeration that might arise in our minds by a simple illusion to this flagrant adulteration, the analyses may speak for themselves. The composition of the samples examined is as follows in 100 parts:

SAMPLE NO. 1.	
Acid calcium phosphate.....	46.25
Calcium sulphate (gypsum).....	13.13
Starch.....	25.00
Cream of tartar.....	15.62
SAMPLE NO. 2.	
Acid calcium phosphate.....	29.04
Calcium sulphate.....	26.00
Starch.....	11.00
Cream of tartar.....	33.96
SAMPLE NO. 3.	
Calcium sulphate.....	33.33
Starch.....	26.30
Cream of tartar.....	40.37
SAMPLE NO. 4.	
Calcium sulphate.....	62.39
Cream of tartar.....	37.61
SAMPLE NO. 5.	
Alum.....	46.13
Starch.....	19.90
Cream of tartar.....	33.00
SAMPLE NO. 6.	
Alum.....	19.00
Starch.....	29.10
Acid calcium phosphate.....	14.08
Cream of tartar.....	37.82
SAMPLE NO. 7.	
Alum.....	54.60
Starch.....	23.00
Cream of tartar.....	22.40
SAMPLE NO. 8.	
Calcium sulphate.....	9.00
Acid calcium phosphate.....	10.00
Starch.....	16.33
Cream of tartar.....	54.67

The same considerations here given will naturally apply to the third group of adulterations given above, where an important ingredient of food is extracted before the article is brought upon the market.

The fourth kind of adulterations enumerated above, where means are employed to improve the appearance of an inferior article of food, may injuriously affect public health in two ways. First, when the actual condition of a food unfit for consumption on account of change or decomposition is thereby obscured; secondly, when the substances added for this purpose are in themselves injurious to health, as was seen in some of the examples cited.

That the use of poisonous colors in foods and drinks of all kinds, which were employed in the fifth category of adulterations, is a crime, and should be universally condemned from a sanitary point of view, is a matter of course.

The sixth and last group of adulterations, which embraces the use of strong antiseptics in preserving perishable articles of food, deserves a much fuller consideration than is proper for us to give it on this occasion, because the practice is not confined to manufacturers of commercial food products, but has found universal favor in private families, and because the baneful effects of the drugs employed are not fully appreciated or understood. From the examples cited above, it will be seen that only such antiseptics can be employed that have no appreciable taste or odor, or have a taste similar to that of some food product, as is the case with saccharine, a recently discovered coal-tar compound, which is three hundred times as sweet as sugar.

In general, there are two objections to the

use of antiseptics in food from a sanitary point of view. In the first place, they are diagonally opposed to the process of digestion, by destroying the activity of saliva, pancreatic juice and other digestive fluids. So far as has been determined by experiment, this property is most marked in saccharine and salicylic acid. The latter substance has found greatest favor as a food preservative in recent years, since it has all the necessary qualities in a high degree, and since its artificial production is equal to all demands, and its price is so low that its liberal use has been made possible. Saccharine is known to have been employed in glucose sirups, but on account of its extreme sweetness, it has no doubt already found its way into all such articles of food and drink where it can replace ordinary sugar.

But also on account of their physiological effects are antiseptics to be condemned as ingredients in our daily food. The physiological action of saccharine has not been definitely determined. Boracic acid is supposed to be harmless, but recent investigations prove it to be dangerous, as it strongly acts upon the mucus membrane of the large intestine. In Sweden, where this drug is very commonly used for preserving milk and fish, cases of poisoning from this source have occurred.

The physiological effects of salicylic acid are well known. The dose is from ten grains upward. From the amount of the acid recently found in various articles of food, it is evident that the minimum dose of the drug can easily be exceeded in the ordinary use of food. Its most marked action is the depressing effect upon the heart and the process of respiration, and hence should be strenuously avoided in cases of heart and pulmonary troubles. The evils which must result from the reckless use of these drugs in articles of daily food is evident to all.

Ohio State University.

BOOT-JACK.

Mr. Jas. M. Jordan sends the description of the handy boot-jack, illustrated. The side pieces are 1x2, 30 inches long.



The board is 1x6, 10½ inches long. The hole is ¼ inches wide. It is put together with small, iron bolts.

RAISIN CULTURE IN CALIFORNIA.

Raisin culture is the simplest and surest of all our fruit industries. It requires no expert labor, and is as simple in its main details as the culture of a crop of corn or potatoes.

Raisins are made principally from the muscat family of the European, or rather, Asiatic species of grape vine, *Vitis vinifera*. The muscats are strong, sturdy-growing vines, with large, white, nearly transparent, round or oblong, sweet fruits. The two muscats mostly planted for raisins are the white muscat, of Alexandria, and the muscatel Gordo Blanco. From these the great bulk of fine, choice raisins is made. They are also fine table grapes, and are grown extensively for this purpose where the climate is not suitable for raisin making. There are many other varieties of muscats, muscatels and Ma-

layas used for making into raisins, one of which, the Seedless Sultana, is very fine, and will have a great future.

The white muscat is a very large, oblong grape, shagging in bunch, with quite a thick, brittle skin, with firm-breaking flesh until overripe, with a very sweet, musky flavor.

The Gordo Blanco is nearly equal in size of berry, skin and flesh not quite so firm, bunch shorter and more compact. Their culture and soils are the same. From both varieties the finest, white, sweet wines are made.

There is but one climate for success in raisin culture; that climate must have a long, hot, rainless, or nearly rainless summer. In such a climate they are best grown by irrigation. With the right heat and rainless summer and autumn, and a good, rich, friable, deep soil, and no cold in winter sufficient to injure the vines, we have a paradise for raisin culture. Of these, California has a complete combination in the great San Joaquin valley—200 miles long, north and south, and 75 miles wide. This is destined to be the great future raisin center of the world, besides being very nearly perfection for all of our other great commercial fruits.

There, for a time, at least, in this great valley, crops must have irrigation. This bringing the water from the mountains, in canals many miles in extent, is an immense expense in the start, but when once done rightly it is permanent, and gives never-failing crops. Every year has its harvest; of some crops, two or three, or even five or six.

The raisin grapes named, as well as nearly all other grapes, give two crops each season. The Bartlett pear ripens one full crop and two partial crops; the fig, two full crops and a partial crop; alfalfa, six to eight crops, etc.

It is a fact that a homestead of ten acres of this rich, valley soil will give its owner each year, in net cash, a greater return than the average returns from 160 acres of the rich lands of Illinois or Iowa. This is a fact very easily demonstrated by practice and figures, when planted in any fruit or crop I have named, and this with about one fourth the labor required there. Then, twenty acres are enough; all that a large family will require to give them abundant support, and with due thrift and economy, save money to lay by each year. On that amount of land they can produce everything they require, or abundant means to buy them with.

The climate and soil of the whole great valley is practically the same, with the only difference in the upper or south end of the valley; the soil is a little the richer and the climate the drier, and therefore the better for raisins and nearly everything else when the irrigating water has been brought in plenty. A syndicate of the largest land holders in the state, in conjunction with the great Southern Pacific railroad, has brought water for a great portion of Kern county, and have thrown open their lands to actual settlers, who will contract to improve, at the nominal price of \$45 an acre, in tracts of twenty acres or more. This land has been selected by experts as especially adapted to the culture of raisins and other fruits, in solid, leveling tracts, so that differing people can be placed together. This is less in price than as good land can be bought for by the section in the same region for cash. Here we have the cost of a 20-acre raisin farm—\$900; and this on any reasonable length of time, giving the colonist a chance to pay for the land from crops grown on it. Let us see what these crops are worth. The San Francisco *Chronicle*, the leading journal of this coast, has been giving a very conservative history of the different fruits grown on this coast; it says in its issue for February 2nd: "In no case do our reports show a less return from four-year-old raisin vines than \$100 an acre, net, and from this up to \$400 and \$500 an acre, net, and show that an annual income of \$150 to \$300 an acre, net, may be counted on as sure."

My personal investigations show that an average of \$300 an acre from good land and good care, net, is assured for many years to come, from the present outlook. The *Chronicle* places the prices at which good raisin lands can be had for, under irrigation water, at from \$50 to \$200 per acre; the \$50 land is a long distance from railroad facilities.

D. B. WIER,

[To be continued.]

Our Farm.

FARM AND FIELD NOTES

BY JOSEPH.



ADVANTAGES OF DRAINAGE.—

We have had rain, and plenty of it, this spring. It is just a season when the merits of thorough drainage show themselves to best advantage. The fields that were tile drained have been in working order during the intervals between the rainy spells, while the undrained lands were at no time in best condition for tillage, and even now, May 21st, after a very heavy rain, are worse than ever before—swamps and mud-holes. It will take some time before they will be fit again for plow, harrow or cultivator.

It often happens that I am asked to name the best manure for these undrained lands, and I usually recommend, first of all, the putting in of sufficient tile drains to relieve them of surplus water, and get them in working order in early spring. After that, any kind of manure will come acceptable.

The advantages of a little drainage have impressed themselves on my mind, just at present, quite deeply, and I think permanently. I had prepared three patches of one eighth acre or less each, quite a distance apart from each other, for a prize test and show crop of Prizetaker onions. On two of these patches the drainage is perfect, on the third (and just the one on which I had calculated most, and applied manures with a lavish hand), drainage is lacking. The everlasting rains of this spring have transformed this one lot into a mud-hole, and this after it had been once put in model condition for planting. Here it is nearing June, and it may be days before I can have the land replowed and harrowed. But I am not yet discouraged, as I have plenty of young onion plants to set out just as soon as the season will permit. The other two lots were always in working order, except right during rains, and for a little while after. On one piece seed was sown in April, and is growing nicely. The other has been planted with plants grown in cold-frame, and is looking extremely well.

SUBSOILING.—Tearing up the subsoil with the subsoil plow, and thus giving the water some sort of channels underneath the top soil and the reservoir greater depth, is often of great help in undrained lands; but it will not do much good where such fields are now and then turned into swamps, with water standing on the surface. There should be at least some effective surface drainage, and an outlet sufficiently deep to carry off the surplus water both from the surface and from the lacerated portion of the subsoil. If this is properly attended to there is no reason why the land should not bear good crops, and respond freely to manure application.

CABBAGE PESTS.—I hold again several inquiries in regard to best means of getting rid of the green worm that infests cabbages. I have answered similar questions frequently before, but I suppose, we must have compassion on the new corps of readers which the FARM AND FIRESIDE is adding to its list all the time. I find that the simplest and most effective remedy for cabbage-worms in the home garden is fresh pyrethrum (insect powder), and I always use the American-grown article, known under the trade name "Buhach," and made by the Buhach Producing and Manufacturing Co., of Stockton, California, because I can get it from them fresh, and in unadulterated strength. I usually mix it with three or four times its bulk of bone meal or wheat flour and then apply it by means of a pocket powder bellows. A single puff into the center of each plant generally suffices to put the quietus to all the worms that are eating its substance. It kills by contact, and is non-poisonous and harmless to any creature except insects. The stale stuff usually kept at the drug stores is not reliable, and if used at all, should be in full strength and undiluted. Buhach is also effective when applied in spray form, dissolved in water, and all the more so if thrown onto the plants with considerable force so it will reach every part of the

plant and every insect on it. The chief trouble with it is the inconvenience of getting it, as it is not generally kept on sale by supply dealers. The only way to do is to send directly to the firm in California, who forward small packages by mail at regular retail rates. I get my supply in this way. For chickens, also, it is better than tonics and medicines. Dust it on the old hens when setting, or hovering small chicks. The lice will at once cease sucking life and strength out of the young things, and thus serve to keep the latter in all their vigor and health. I seldom lose a chick from disease, because I keep them free from lice by the means suggested.

For the green aphid (lice) which often are found thickly on cabbages, cauliflower and similar plants, I prefer the kerosene emulsion, or strong tobacco tea sprinkled or sprayed on them. The latter may be made by steeping tobacco refuse, such as stems or dust, in water until this has the color of strong tea. The kerosene emulsion, however, is often more convenient to make (tobacco refuse not always being at hand), and it is an infallible cure, killing eggs as well as adult insects. If thrown upon the infected plants in a forcible spray (by means of a force pump and spray nozzle) it is more apt to reach every insect on the plant, and can be applied more economically. The following is one of the best recipes for making the emulsion, taken from "Horticultural Rule Book," by Prof. Bailey:

"Soft soap, 1 quart, or hard soap—preferably whale-oil soap—one fourth pound; 2 quarts hot water; 1 pint kerosene. Stir until all are permanently mixed, and then add water until the kerosene forms one fifteenth of the whole compound (about one gallon). A good way to make the emulsion permanent is to pump the mixture back into the receptacle several times with a force pump."

Orchard and Small Fruits.

CONDUCTED BY SAMUEL B. GREEN.

WHOLE ROOT VERSUS PIECE-ROOT TREES.

Unquestionably, much the best trees are those on whole roots—by which is meant such as are grafted or budded on vigorous, first-class stocks, just above the crown with the natural collar left undisturbed, using but one seedling for one tree. In whole-root grafting a 4-inch scion is used and the long root of the seedling is shortened to 7 or 6 inches, the same as when transplanting for budding; besides making the graft convenient to plant, this induces more strong side roots to put forth, as well as several vigorous, deep-extending roots instead of the one straight tap root that, otherwise, would usually result. Thus the grafts are 8 or 9 inches long, allowing one inch for the splice, and involve special care and preparation, as well as considerable more work in planting, than piece-root grafts—the latter being but 5 or 6 inches much oftener than 7 or 8 inches in length. And as the joint is planted fully 3 inches below the surface, own roots are sent out from the scion. Budded whole-root trees, if budded low—just above the collar—are equally as good as grafted, if properly planted so that all the seedling stock be under ground; but they are not on their own roots and for cold regions are less desirable than grafted trees. Such is the difference, even while young, that when whole-root and piece-root trees of the same variety and size are mixed together, there are but few who could not soon learn to separate them readily. Indeed, E. Moody, one of the oldest and most experienced nurserymen and orchardists of western New York, declares he can distinguish at a glance the two classes of trees, even in bearing orchards.

Downing wrote, years ago, in the great work of his life, "Fruits and Fruit Trees of America": "Large quantities of trees are propagated by using pieces of roots, thus forming from the root of one stock two or more grafts. This practice, although quite common, is of very doubtful value, and by prominent horticulturists considered as tending to debilitate and reduce vitality—the seat of vital life, in fact, resting in the natural crown of the seedling, and that, once destroyed, cannot be

renewed. It is therefore apparent that but one healthy, permanent tree can ever be grown from single seedling stock."

Prof. J. L. Budd, of the Iowa Agricultural College, says: "At one time I made 1,000 crown-root grafts, and another 1,000 of the same varieties on pieces of root. The crown-root grafts, when I came to take them up, had fewer fibres but more strong, far-reaching roots than the others. I planted them all in an orchard, and the result was very much in favor of the crown-root grafts. In later experiments I find it is always true that the crown-root grafts have stronger roots and more of them, and have many far-reaching roots, and in my opinion are the best."

Their chief fault is that the scion emits not only a scant but almost invariably a shallow system of roots. Hence, unnumbered thousands of these trees fall before storm and drouth, wet and cold. For all who have observed with any degree of care know that cuttings—be they grape, quince, LeConte pear or the scion cuttings of piece-root apple grafts—while making an abundance of fibrous horizontal roots, rarely and almost never put forth any strong, deep-reaching or tap roots. Cuttings are well enough for grapes, currants and such things as do not require far-reaching brace-roots, but apple trees thus grown will cause sore disappointment. Especially should they be avoided in regions where irrigation is practiced; for in these regions high winds prevail, and when the water has long been turned on only those who have seen it can form any idea how completely the soil is soaked, and how often the winds turn out such trees by the roots. In Colorado, we have seen many examples of this—not in old, worn out orchards, but in apparently vigorous, young orchards just beginning to bear.

Trees grafted on pieces of roots are by no means destitute of all value; but the longer the piece of root the better the tree. One trouble has been that grafts on bits of roots 2 inches or less are far more plentiful than on pieces 3, 4 and 5 inches long.—*Coleman's Rural World.*

INQUIRIES ANSWERED

BY SAMUEL B. GREEN.

Thrifty Orchard—Wood Ashes.—W. K. L., Wrightsville, Ohio, writes: "What will be the best way to promote thriftiness in an orchard where hogs have been kept?—Of what value are ashes from hark, sawdust and wood on a cold, clay ground?"

REPLY:—The best way to promote thriftiness in any orchard that is out of condition is to judiciously prune the trees and thoroughly cultivate and manure the soil. Of course, the trees must at the same time be

protected from depredations of insects. Ashes such as you mention contain all the mineral elements of plant food, and are valuable because furnishing plant food, and also on account of their starting chemical action in the soil, by which means they make soluble much plant food which otherwise would be useless. If your land is cold, it may need drainage. Ashes do not show much effect upon soils that are not well drained.

Borers on Blackberry Bushes.—W. J. P., Oberlin, Ohio, writes: "I have sent you some pieces of Snyder blackberry cuttings containing eggs or worms that are destroying a large portion of our canes. What are they and what is the best way to get rid of them? We cut them all off at the ground where we found them and burned them up."

REPLY:—The pieces of blackberry stems received are injured by the growth of a borer called commonly the red-necked Agrilus (*Agrilus ruficollis*). The eggs are deposited in the young canes in the early summer by a beetle about one fourth of an inch long. The small worms hatching from them eat into the cane, finally producing swellings and slits in the bark, as seen in your canes. The beetles come out early in the summer. The best remedy is that which you have already used; namely, to cut out the infested canes in the winter or spring and burn them. The same insect also infests the raspberry canes.

Overmanuring Orchards—Oyster Shell Bark Lice.—W. N. K., Greenville, Tenn., writes: "What do you think of the way I have fertilized my orchard? Last year I sowed it down in Orchard and Blue grass; this spring the ground was spaded around each tree about three feet, and strong stable manure put around them with straw on top of the manure. I intend to put lime around on top of the straw to keep off insects. My trees have been set out three years. One tree died last season. The top was covered with either eggs or insects with little, oblong, round backs, clinging closely to the bark in the shape of the tree or limb on the underside. They are of a dark color."

REPLY:—You should avoid overmanuring in growing apple or, in fact, any trees. It should be the aim of the grower to have his trees make a clean, strong, natural growth that will ripen in the fall, and he should studiously avoid anything that will promote a late growth. I cannot tell whether your system of manuring is good or bad, for I do not know the condition of your soil. There is not much danger of overfeeding orchard trees after they come into bearing, but young trees are often overfed. The insects on your apple trees that cling so close to the bark are probably oyster-shell bark lice, and are a great pest in some localities. Remedies—They may be destroyed by brushing or scraping them off in the early spring, and then washing the trees with a strong solution of soft soap to kill any eggs that are left; or, by brushing the branches very lightly with pure linseed oil. The oil forms a coating over the insects or eggs and so suffocates them.



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EXTRACTS
FROM CORRESPONDENCE.

FROM GEORGIA.—We have a fine, rolling country, healthful and fertile. There is much uncleared land. Railroads are now being pushed through this territory, and fine opportunities for settlers in communities are offered. We prefer our native American people to any others.
M. & H.
Dublin, Ga.

FROM ARKANSAS.—This county is unsurpassed as a farming country, and we have a great deal of valuable timber, such as cypress, maple, ash, hickory, poplar, oak, gum, sassafras and mulberry. On the Bayou DeView there is as fine cypress as ever grew, and a great many shingles are made there each year. The other named timbers are found in abundance on and near Cache river. If a man with push about him would establish a saw-mill on that stream he could make it pay. He could carry the lumber by water to New Orleans, or by rail to Memphis or St. Louis.
W. T. C.
Cotton Plant, Ark.

FROM WEST VIRGINIA.—Kanawha county, in general, is hilly and rough, except the river bottoms and some little tablelands; the latter are generally rather poor, but have a good sub-soil, and are capable of being greatly improved, when they become our finest grain and grass land. The rougher portions are fine for grazing, as also for all kinds of fruits, such as apples, peaches, plums, cherries, etc. Our level upland brings the finest vegetables and small fruits I ever saw. Land is still very cheap—\$2 to \$5 per acre for unimproved. Some of it contains fine veins of coal, easily worked.
D. S. G.
Charleston, W. Va.

FROM NEW YORK.—Rye, oats, corn and potatoes do well here in Washington county. Potato-bugs and grubs are very numerous. Strawberries, raspberries, blackberries, gooseberries and huckleberries grow in abundance in the pastures and on the surrounding hills. Garden strawberries are cultivated to some extent. We have plenty of hard and soft wood, such as ash, oak, elm, beech, birch, maple, walnut, cherry, butternut, hemlock, pine and basswood. We also have never-failing streams, in which abound trout, suckers and bull-heads. Potatoes are worth 35 to 70 cents per bushel; rye, 60 cents; oats, 40 cents; flour, \$5.50 to \$6.75 per barrel; coal, \$5.50 to \$6.50 per ton; sugar, 7 to 10 cents per pound.
F. B.
Hebron, N. Y.

FROM IOWA.—Marshall county is located near the center of the great state of Iowa, and if any country deserves fame and a world-wide reputation it is surely this. We have as healthy a climate and good water as can be found anywhere. We have mostly rolling tableland that will produce anything we wish to plant, including all the fruit for our own use; still, we do not claim a fruit country. This county is well improved. We have five great lines of railway running through the county, three of them centering in Marshalltown, which is a great city, and wholesale distributing point for all the country round about. Our farmers live in good houses, and take solid comfort in spite of low prices, while their cattle feed on pastures green in summer and are sheltered in good barns in winter. Land is worth \$40 to \$60 per acre; coal is cheap; wood and flowing streams are plenty. Farm hands get \$20 per month.
G. M.
Haverhill, Iowa.

FROM CALIFORNIA.—This is a very fine country to live in. When we lie down at night we have no fear of the fierce blizzard or the destructive cyclone, nor the fatal effects of lightning. The first crop of wool has just been clipped; the second crop will be taken the last of September. There are many thousands of sheep in this country, all Merino. The boom we had here three years ago was a great curse to the people and nearly all the industries of this part of the state. A wonderful wild craze got hold of nearly every person who had a few dollars to invest in town lots. If the boom had lasted three years longer the entire state would have been laid off in town lots. There are many town sites where lots sold from \$100 to \$500 apiece which can now be bought for from \$75 to \$100 per acre. The scale bug got in his deadly work here during the boom, and nearly destroyed the orange trees, but now we think we shall conquer him. There are many thousands of orange trees being raised now for future planting.
T. N.
El Modena, Cal.

FROM TEXAS.—McCulloch county is very thinly settled. About two thirds of this land will never do for farming purposes on account of the hills and rocks. This is a great stock county at present, but it won't be long, for the farmers are coming in here fast. You can get any kind of land here that you want—level, without any rocks, with soil from twelve to fourteen feet thick, or mountainous with plenty of rocks. You can buy land here from \$2.50 to \$3 per acre, and this land will produce well. Cotton makes about one half to a bale to the acre, and sells from \$40 to \$50 per bale; corn, 25 to 60 bushels, which sells from 25 to 50 cents per bushel; wheat, from 15 to 40 bushels, and sells from 70 cents to \$1 per bushel; oats

yield from 60 to above 100 bushels to the acre, and sell from 15 to 25 cents per bushel; barley, 40, and rye, 20 to 30 bushels per acre; sorghum, 10 to 18 tons; millet, 3 to 4 tons. The yield of pumpkins, melons, etc., is enormous. All small fruits do well here. Pear and apple orchards are just coming into bearing, and are promising. The people here don't feed their stock at all during the winter. They keep in very good fix on the grass.
Waldrip, Tex.

FROM MICHIGAN.—I live on the plains of the central part of the lower peninsular of northern Michigan. I think A. S. C., of Sheldon, Mont., speaks the solid truth when he says, "The prosperity of the people depends more on themselves than on the country they live in." I have not noticed any evidence that the garden of Eden was located just here where we live. Land here is not valued according to its worth as farming land, but according to what the owner thinks he can get for it. Land sells for from \$1 to \$10 an acre; the choicest land for farming purposes can be obtained for \$1 per acre, or even less. Our blessings are crystal, clear, cool water, good health, and the appetite of a turkey. We raise the best potatoes that can be raised. Wheat, oats and rye are our grains. The soil varies; the high land is less frosty and always good soil, but you have to go down deep for water. Long winters are our only drawback, but I rather enjoy a long winter; it gives a person a chance to recruit. There is plenty of work at paying wages. A few years ago this was the home of the deer and the lumberman, but both have lost their former prestige.
J. R.
Roscommon, Mich.

FROM CALIFORNIA.—Sierra valley is situated in the eastern part of California, high in the Sierra Nevada mountains. It is twenty miles long and ten miles wide, is surrounded entirely by high mountains, the highest of which is 6,000 feet above sea level; one portion of it lies in Plumas and one in Sierra county. The mountains on the south and west sides of the valley are heavily timbered, while on the north and east they are almost barren. There are five passes from the valley, and five towns in the valley, the combined population of which numbers about 1,500. There are people here from England, Ireland, New England and the middle states. Farming and stock raising are the principal industries. The principal exports are butter, cheese, hay, beef and some grain. Being situated so high in the mountains, it has a cold climate, which prevents the raising of semi-tropical fruits. In some parts, where sheltered by mountains, apples, peaches and berries are raised, while in the middle of the valley, where there is no timber, the hardy vegetables, such as turnips, potatoes, beets, etc., are raised. The past winter was a severe one. In some parts of the valley snow fell to a depth of eight feet, and on the mountains twenty and twenty-five feet. It was nearly one continual storm from December 1st until February 20th. Sierra Valley has nine schools and two churches.
A. C. W.
Sierra Valley, Cal.

FROM ARKANSAS.—Stuttgart is the center of "Grand Prairie," and near the northern line of Arkansas county, on the St. Louis, Arkansas and Texas railroad, commonly known as the "cotton belt road," which is intersected here by the Grand Prairie railroad and the Kansas City and New Orleans railroad. Arkansas, Lonoke and Prairie counties embrace about all of "Grand Prairie." About one half of these three counties is high prairie land, being ninety feet above the level of White river, and seventy-five feet above the Arkansas river. The prairie is rolling next to the timber lands, out from one to five miles. Where the prairie is ten to fifteen miles wide, it is level in the center a width of two or three miles and needs drainage before being tilled. At present it is being rapidly taken up by northern people who understand farming it to advantage. Surface drainage is all that can be used now, as there are no tile works in this part of the state, and the freights are too high to have them shipped. Fruits of all kinds do finely and make nearly double the growth that they do in central Illinois or Iowa. All kinds of vines and vegetables do exceedingly well. Farmers are beginning to find out how to raise corn, wheat, oats and rye to advantage, and with profit. Many farmers last year raised 40 to 60 bushels of corn per acre, 20 to 35 of wheat and 30 to 40 of oats. One bale of cotton per acre was raised by several parties on prairie land last season. There is a large amount of prairie hay baled and shipped from here. The prairies are covered with a heavy crop of blue stem grass and rosin weed, and yield about one and a half tons per acre the first cutting, and one ton on the second. Two crops are raised of nearly all kinds of vegetables. Most of the cattle are of the native breeds and small. Hogs are the regular razor-backs. Some have to drink willow an hour to make a shadow. Stuttgart is a thriving town of some 2,000 inhabitants.
T. H. S.
Stuttgart, Ark.

FROM LOUISIANA.—It is true that the orange and all of the citrus family will not succeed in all parts of south-western Louisiana without proper protection. That of water has proven the best, but forest trees, such as will grow quickly and afford a continuous foliage, as the camphor, pepper, eucalyptus and gravilla, are good for protection. In a few places where the orange tree was very near a large live oak, it was found to be unharmed in the freeze of March, and the blossoms did not drop. This case was the native, or Creole orange, which has proven to be less hardy than the budded trees. If water protection can be had and the water to the north and north-west, and of sufficient width, the tree protection is unnecessary, especially with the budded fruit. But the recent frost that followed the mildest winter ever experienced, either in the South, East or North, that found the trees that had been

planted long enough to start the growth and were growing all the winter, injured them to the extent that the little, tender shoots were all either killed or damaged, and in some cases the tree was killed down to the roots. At our place nearly every tree was killed or seriously injured, while only a few of the budded trees were killed or injured. This condition of things is a great surprise to the natives here, who have grown the orange from twenty to forty years, who would not admit that any fruit was as good as the native. They have now concluded to plant the budded fruit. We are growing the English walnut (paper and hard shell), the soft shell almonds, the California French prunes, the Florida (tree) citron, grape fruit, with the varieties of plums,

and every variety of oranges and lemons we can hear of or buy. I would also like to add a statement of the cost of orange growing, made by one who is a practical, Louisiana grower of oranges in south-western Louisiana:

200 acres land at \$10 per acre.....	\$2,000
20,000 trees, partly budded, at 20 cents.....	4,000
Preparing land and planting, 5 ".....	1,000
Budding and care for one year, 5 ".....	1,000
Care and cultivation 4 years, 5 cts per year.....	4,000

	\$12,000
Crop end of 5 years, ¼ box to tree, \$1 a box.....	5,000

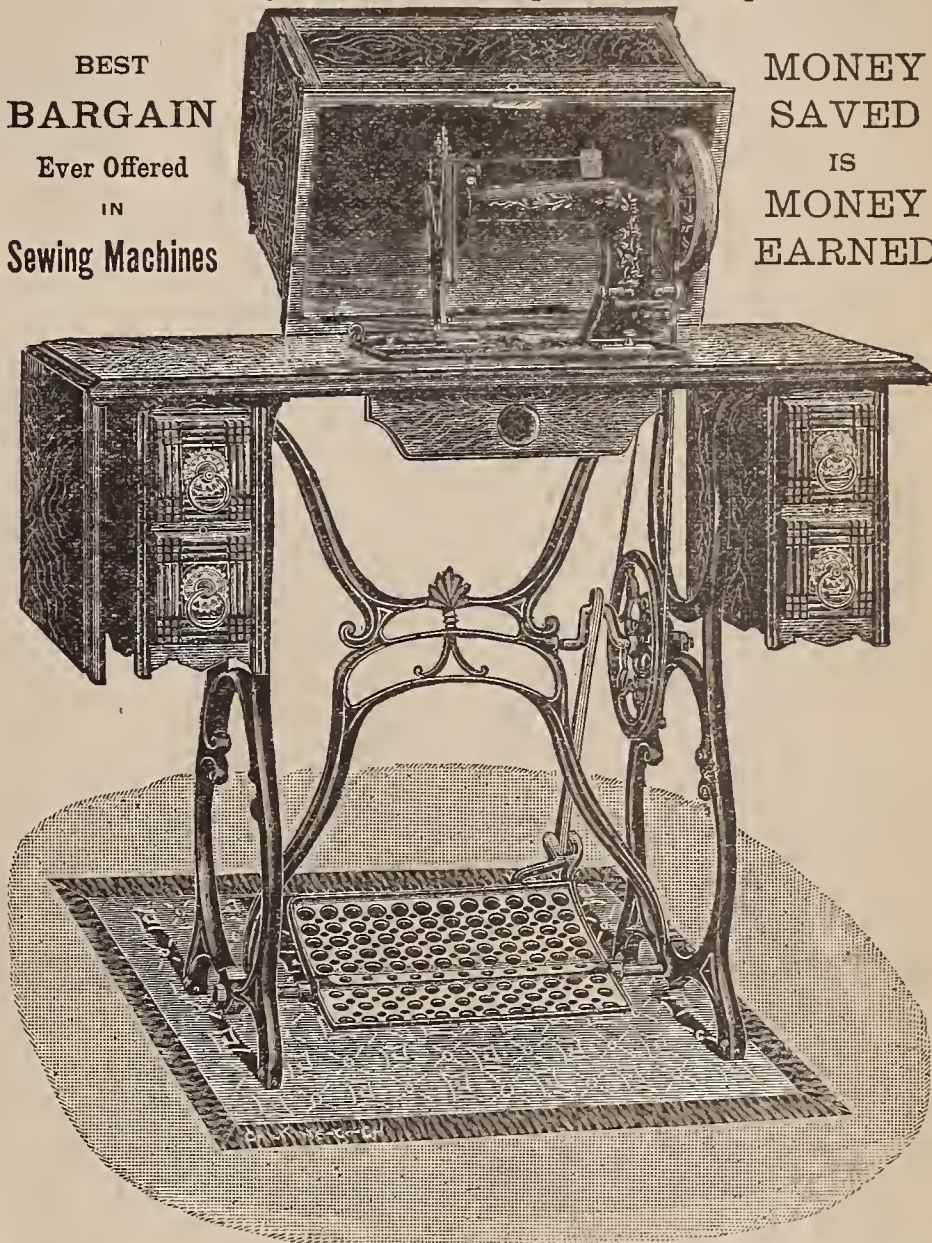
Net cash at end of 5th year.....	\$7,000
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The Loose Balance Wheel is actuated by a solid bolt passing through a collar securely pinned to the shaft outside of the balance wheel, which bolt is firmly held to position by a strong spiral spring. When a bobbin is to be wound, the bolt is pulled out far enough to release the balance wheel, and turned slightly to the right or left, where it is held by a stop-pin until the bobbin is filled. Where the machine is liable to be meddled with by children, the bolt can be left out of the wheel when not in use, so that the machine cannot be operated by the treadle.

The thread eyelet and the needle clamp are made SELF-THREADING, which is a very great convenience.

Each Machine, of Whatever Style, is Furnished with the Following Attachments:

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| 1 FOOT HEMMER. | 6 HEMMERS, all different widths. | 1 SCREW-DRIVER. |
| 1 TUCKER. | 1 WRENCH. | 1 GAUGE. |
| 1 PACKAGE OF NEEDLES. | 1 THREAD CUTTER. | 1 GAUGE SCREW. |
| 1 CHECK SPRING. | 1 BINDER. | 1 OIL-CAN, filled with Oil. |
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The driving wheel on this machine is admitted to be the simplest, easiest running and most convenient of any. The machine is self-threading, has the very best tension and thread liberator, is made of the best material, with the wearing parts hardened, and is finished in a superior style. It has veneered walnut cover, drop-leaf table, 4 end drawers and center swing drawer.

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Our Fireside.

THE EVENING TIME.

Together we walked in the evening time,
Above us the sky spread golden clear,
And he bent his head and looked in my eyes,
As if he held me of all most dear,
Oh, it was sweet in the evening time!

And our pathway went through fields of wheat;
Narrow that path, and rough the way,
But he was near, and the birds sang true,
And the stars came out in the twilight gray.
Oh, it was sweet in the evening time!

Softly he spoke of the days long past,
Softly of blessed days to be;
Close to his arm, and closer I prest—
The corn-field path was Eden to me.
Oh, it was sweet in the evening time!

Grayer the light grew, and grayer still,
The rooks flitted home through the purple shade,
The nightingales sang where the thorns stood high,
As I walked with him in the woodland glade.
Oh, it was sweet in the evening time!

And the latest gleams of daylight died;
My hand in his enfolding lay;
We swept the dew from the wheat as we passed,
For narrower, narrower wound the way.
Oh, it was sweet in the evening time!

He looked in the depth of my eyes, and said,
"Sorrow and gladness will come for us, sweet;
But together we'll walk through the fields of life
Close as we walked through the fields of wheat."
—Good Words.

Colonel McNaughton's Fiancees

"It is too ridiculous to think of," declared Mrs. Morton. "I shall not allow myself to be drawn into the quarrel on either side."

"But if you play the organ while Belle Dutton leads the choir, you'll find yourself counted in with the Dutton clique, an' the Fletchers will be as chilly as an ice-house. The Fletchers have got the biggest followin', an' for a doctor's wife—"

"It is too preposterous," interrupted Mrs. Morton. "I don't see how it ever happened."

"No more do the rest of us," replied her landlady. "Some folks think it never did happen, an' I s'pose that's why there's so much feelin' on both sides. Everybody liked Abner McNaughton, an' he was amazin' handsome, with them great, sleepy, black eyes o' his; but he was a quiet, shy sort o' man, an' nobody ever thought he'd really git 'rouud to ask one woman, let alone bein' engaged to two at once."

"And you say that they both wear mourning for him?"

"Certainly. You noticed Alice Fletcher yourself in the broad aisle pew, Sunday. An' Belle Dutton sets in the front o' the choir gallery with a bonnet blacker than mine. Of course, she couldn't quite wear the widder's cap."

"It is certainly very peculiar," commented Mrs. Morton; "but I don't see why they need to have drawn all Freeport into their quarrel."

"They needn't if it hadn't been for the Duttons—you might say 'twas them; 'twas their cousins, the Barnabys, talkin' so about Alice Fletcher's bein' there when he died. I was there myself, an' ther' wasn't no occasion for remarks."

"You see, 'twas this way," Mrs. Eaton continued, having rid her parlor of an intruding fly: "Old Dr. Smith was alive then—the one whose practice your husband's takin', Mis' Morton. He pulled up to my gate one mornin' an' sung out that Colonel McNaughton was pretty sick."

"'Shoo! you don't say so!' says I, goin' out to the hnggy. 'Au' nobody to take care o' him but Aunt Chloe!'"

"'Waal,' says he, with a kind o' cur'us twinkle in his eyes, 'Alice Fletcher's there now. She says Aunt Chloe'll be needed upstairs, an' she'll jest stay a spell an' make the broths an' hoiled milk, 'cause she understands cookin' for sick folks; she does, and no mistake. I'd rather have her than a nurse, if she can only stay,' says he."

"Well, you could 'a' knocked me over with a feather. The Fletchers think they're a little better'n the folks that signed the Declaration, and Alice is the very proudest o' the lot. I told the doctor p'r'aps I'd better run up a spell; Aunt Chloe was gettin' pretty old to take care of a sick mau."

"I thought maybe you'd want to do something," says he, driving off, with the great, fat chuckle he had when he was tickled.

"Waal, to make a long story short, I found Alice Fletcher in the McNaughton kitchen, jest as easy as though it was her own parlor. I went upstairs to see Chloe, and I see right off that Abner was really dreadful sick, an' would need close tendin' for a week or two, at least. Before I come away the door-bell rung, an' Alice asked me to answer it. Who should I find there but Belle Dutton, all dressed up, an' carryin' a big bouquet! She asked most partic'lar about Colonel McNaughton, an' she'd have asked to see him if I hadn't put my foot down beforehand. As 'twas, she finally went off, directin' that I should be sure to take the flowers up to him, with her kind regards. When I told Alice, she kind o' flushed, but she

didn't say notbin' till I come to go home. Then she asked, with her face bent over some beef juice she was squeezin', if I could manage to stay there an' help for awhile. She said Aunt Chloe might need help in the colonel's room, an' seein' his sickness had got all over town, there would be troops o' folks to inquire. I see she kind o' wanted me to answer their questions, an' 'pear to be runnin' things, so's she could keep out o' the way o' gossip."

"I allus liked Alice first-rate, for all the Fletchers are so high-steppin', an' I staid right there, though I didn't know how to spare the time nohow. All the while I was there the Duttons fairly kep' the bell-haule warm. Sometimes 'twas Belle with flowers, and sometimes 'twas her mother with jelly, an' possessed to git either upstairs or into the kitchen. They'd got some hint about Alice, somehow, an' I 'most had to lie, dodgin' their questions; but they didn't find out nothin' from me."

"The thing went on for a week, an' I did feel mortal queer. Ther' hadn't ben a word said in town 'bout Abner McNaughton's bein' engaged since he fust come back from the war. Everybody was talkin' then about the big fightin' he'd done, an' all the girls was crazy about him. Abner wa'n't no great snakes practisiu' law, but he wasn't no better soldier went from Massachusetts. Alice didn't say nothin', but she staid right on, jest as though she h'longed there; an' the other one all the time a-pesterin' the door-bell."

"Then Abner died. It come terrible sudden at the last, an' I hadn't only jest time to whisper over the banister to Alice. She jest whispered back, 'Tell him I've been here,' an' rushed out o' the back door. That's the fust word she let me tell him about it, an' Abner looked pleased; he went with a smile on his face. But then he smiled the same way when I took up Belle's roses. That was along at the fust of it. I hadn't had no place for the last batches, they cluttered up the room so, an' I had jest tossed 'em into the spare bed-room, where they was out o' the way."

"I never shall forgit the day I got home from the funeral. My daughter Sarah opened the door and said: 'W'y, mother, what makes you so late? I'm clear heat out; we had such a time over the music,' says she."

"'It sounded well enough,' says I, for I'd got somethin' more'n music on my mind. 'Belle Dutton an' Mary Hopkins sung, I s'pose?'"

"'Belle wouldn't sing,' says Sarah. 'She says she was engaged to Colonel McNaughton, an' she's goin' to wear mournin' for him. She didn't want to sit up with Aunt Chloe at the church an' make talk; but she's sufferin' too much to sing.'"

"'Waal, I was beat! I'd jest come from Alice Fletcher's, seein' she wa'n't at the church, an' found her dressed in black, with great lines in her face, an' her eyes about washed out with cryin'. She said she s'posed I knew she was engaged to Abner by her stayin' in the house with me through it all. She hadn't told me before, 'twas to be kep' quiet till they was ready to be married. She said Abner was terrible sensitive about bein' talked about at their age. You see, Alice is plump thirty-five, Abner was a dozen years older, an' Belle ain't more'n a couple o' years behind Alice.'"

"Which one do you think he was really engaged to?" asked Mrs. Morton, after a pause.

"For the land's sake, don't git to arguin' that question! We shall quarrel jest as sure's we do. Sarah an' I had a fight on it before she went to New York. She an' Belle had ben in the choir together ever since Sarah was big enough to play, an' she took up on Belle's side. Now I know that Alice Fletcher ain't the sort of a woman to preteud she was engaged to a mau when she wasn't. Sarah didn't say she was, really, but she thought Alice might 'a' been mistaken, or might 'a' misunderstood something the colonel said. Mistaken, indeed! I told her Belle couldn't 'a' ben mistaken—a girl that had been engaged to three meen, an' hadn't never married none o' 'em! It must be straight lyin' with her. That was too much for Sarah's temper, an' we agreed uot to talk about it while she was to home."

"That's jest the way it's ben all over town. Ther' wa'n't any readin' circles last winter, 'cause Belle had allus run the music an' Alice the readin's. Mis' Square Allen tried to give a big party an' smooth out matters. Of course, Alice or Belle couldn't go, bein' in mournin'; but their relations was there, an' in half an hour folks was drawn up in two lines, scowlin' at each other across the parlor. Ther' hain't anybody tried since to invite only one side at a time. The church picnic, the week 'fore you come here, hroke in two, an' the Dutton crowd an' the Fletcher crowd come home different roads."

"How much longer is this double mourning to go on?"

"'Waal, they've ben at it a year, now, an' I s'pose either girl might go back to colors 'most any time if she wa'n't afraid o' givi' up fust, an' leavin' the other in the field. The families ain't spoke since the funeral, an' they can't very well agree to both quilt an' call it even.'"

Mrs. Morton did not find her first year in Freeport agreeable. Not only was she excluded from the choir, her natural sphere of church and social activity, by the fear of seeming to "take sides" in the great quarrel, but she did not dare to cultivate one or two promising acquaintances for the same reason. She found

the calls and the small teas of the partisans rather trying, because she would not allow herself to be drawn into discussion of the one subject that Freeport could never let drop. She once or twice said that she could not express an opinion, never having known Colonel McNaughton. She had known men capable of engaging themselves to two girls at once, and Colonel McNaughton may have been of that kind, though she did not wish to judge a man whom she had never seen."

This seemed a clever view of the matter to the men of Freeport, who were tired of hearing about Colonel McNaughton's virtues; but feminine Freeport sniffed at it in scorn. They had decided that one woman or the other was in the wrong, and any person who declined to pursue relentlessly the question which, "shilly-shallied."

The doctor was inclined to treat the momentous issue with disrespectful levity, and his practice and popularity were not growing as he wished to see them. There was nothing to be done, however, but to wait. So Dr. Morton took up Tolstoi, and his wife resumed her china painting. As she painted she pondered.

"I am going to ask Uncle Frank here this summer, Ralph," she announced, one day, holding up a dessert plate with a dainty pattern of maiden hair for inspection.

"Indeed—very pretty," replied the husband, glancing up from "War and Peace." He added, when his paragraph was finished, "But I didn't know that you were fond of your uncle."

"You don't like Uncle Frank, dear, because he isn't intellectual, and is fond of ladies' society. But he is a very agreeable man, and the vacation will do him good. He has been very lonely, and has confined himself too close to business since Aunt Mary died." Mrs. Morton was particularly busy with a refractory fern frond just then, and the doctor's superior smile was wasted on the pages of his book.

Franklin Underwood, New York broker, fifty-five by the family record, but looking ten years younger, proved a most interesting addition to the Freeport summer. In that calm village every man walked with the deliberate consciousness that he had "all the time there was." The brisk step with which this rather portly man, wearing clothes of perfect fit, the touch of distinction in their cut, emphasized by a tall, white hat, walked to the post-office after breakfast, tore open his New York paper of the night before, and glanced hastily down the stock quotations, was almost as exciting as a glimpse of the Stock Exchange itself. After this hasty perusal he frequently stopped at the little telegraph railing and dashed off three or four dispatches. Obviously, Mr. Underwood was a man of affairs, such as Freeport did not see very often. Judge, then, the surprise with which the Freeporters saw that after this ten minutes in the morning he was ready for tennis, a boatlug party or a picnic, and even did not disdain to sit on Mrs. Eaton's piazza, chatting gayly with a party of ladies. The Freeport man grown who would talk with women when he could avoid it, was reckoned an inferior order of being. Only certain suggestive hints dropped by the telegraph operator sustained the Freeport sense of the new-comer's importance after this trying discovery.

After breakfast was the accepted Freeport time for "goin' to the store," the store being the usual combination of store and post, express and telegraph offices. The custom received a new impetus now that this interesting figure had been added to the village group, and that Mr. Underwood often walked home through the shaded street with some of the people whom he knew. There was a sudden outbreak of picturesque shade hats, pretty gingham and picnics, symptomatic of Freeport's quickened social pulse. The black of Colonel McNaughton's mourners had become modified to inconspicuousness, and the New Yorker soon came to know both Miss Fletcher and Miss Dutton. Thanks to the tact of his niece, he did not hear the story of Colonel McNaughton. Indeed, people were talking less about it this summer, and partisan lines were slackening.

"I declare," said Mrs. Eaton, "seems as if the whole quarrel was ready to tumble to pieces, if the 'was somebody to take hold an' give a good, smart push. I'm 'most a-mind to speak to Mis' Square Allen about it. She's allus for peace."

A week later cards were out for a large party at Mrs. Allen's—a party of a formal kind that Freeport only saw once or twice in a generation. It was even said that a Boston caterer had been engaged, a report which opened dazzling vistas to the Freeport imagination. There was a block upon Mrs. Allen's stairs when Mrs. Morton came down upon her uncle's arm. Glancing into the parlor, she saw, not three yards apart, Alice Fletcher and Belle Dutton in light evening dresses.

"Good gracious! Both of them!" she exclaimed, under her breath.

"How happy could I be with either, Were t'other dear charmer away!"

murmured the doctor in her ear from the stair behind.

"Hush! Have you no discretion, Ralph?" cautioned his wife over her shoulder, as the party moved into the parlor.

Both Alice and Belle were a little flushed, and were looking their best. Alice was in a simple dress of white wool, relieved by what all Freeport knew as "Graudmother Fletcher's lace." It was difficult to say whether the touch of the patrician came from the dress or the wearer, but the effect was unmistakable. Belle was radiant in a pink silk, all fluttering bows and ends, which softened the growing thinness of her face, and robbed her, to the eye, of at least half a dozen of the years of which Freeport kept remorseless tally. Next to the distinguished stranger the two girls were the central figures of the evening. Evening dress was not known among Freeport men, and even an elaborate, new, pink silk could not compete for attention with Mr. Underwood's glossy broadcloth and linen. It was felt that he conferred distinction upon Freeport by appearing in the garb. There was no scowling, hostile lines to-night, partly because Mr. Underwood had a habit of standing in the middle of a room and drawing people around him. His tone sometimes grew a trifle loud when expatiating to these groups, but the tenor of his remarks was always interesting. He declared Freeport charming, "much better than yachting, where one sees so few ladies, you know," and said that he had not enjoyed a vacation so much for years. Mrs. Morton noticed that her uncle's groups usually included either Miss Fletcher or Miss Dutton. "There is no one in Freeport to be compared to those two girls," she decided. "Miss Fletcher is really distinguished. She never acquired that manner in a little town like this. And Belle is certainly very pretty, though her dress is too fussy. I must get her to sing some of the songs Uncle Frank used to know."

"Which shall it be, which shall it be? I looked at John, and John looked at me."

quoted the doctor, melodramatically, when the Mortons were talking the affair over in their room.

"How ridiculous you can be, Ralph! But I think it will be Miss Fletcher. I overheard Uncle Frank making an appointment to call there to-morrow."

A few mornings later Mr. Underwood came in in high spirits. "I'm in luck, Adelaide. I've made a couple of hundred backing the field in the Suburbau, and I want to 'blow in' the money, as my boys say. Isn't there some place where we could go? A great many Freeport people have been polite to me, and I should like to give a picnic or an excursion, or something."

"There's Silver Lake," Mrs. Morton replied, suggestively. "But, Uncle Frank, isn't the Suburbau betting or gambling or something?"

"Of course it is. I've been betting against Eolus, on a tip from the stables, and by Jove! it was straight for ouce."

"Hush! Don't mention it, then. We Freeporters disapprove of all games of chance outside of our annual church fair. We couldn't think of going to a picnic for which the money came from a horse-race."

"All right, my dear. Then the Suburbau goes to my bank account. I'll give the picnic out of my last week's deal in St. Paul. You invite everybody that you know, and I'll see if I can't get up a special train, and have some things sent up from Pinard's. I didn't like that Boston man's salad."

The excursion was a success. Alice Fletcher was ill, and Belle had what Dr. Morton disrespectfully called "her innings." She lunched with the Morton group, and after sunset she rowed with Mr. Underwood, and sang on the water for his special delectation.

"You were wrong for once, my dear," said Dr. Morton, as he and his wife found themselves alone for a moment. "All Freeport is betting on Belle, or would be if Freeport knew how to bet. She has the inside track to-night."

"You shall not use such shocking language, Ralph. Besides, you don't know what you are talking about. When Alice's note of regret came last evening, Uncle Frank telegraphed an order for flowers and bouquets to be sent to her, and left his card at the express office to be sent with the package. Of course he will have to inquire about the invalid to-morrow. See what Freeport will say when it hears that."

"Oh, well, if she has become 'Alice,' that settles it. I humbly withdraw my inferior judgment."

"Don't be absurd, dear. All Freeport calls her Alice, and why should not I?"

"You should, of course. I am going to begin practising on 'Aunt Alice' myself, at ouce, to get a properly respectful tone."

Mr. Underwood did not wear a jubilant air after his call at the Fletchers', and Mrs. Morton was puzzled. Could it be that the girl had refused him? That did not seem probable to the practical Adelaide. It was more reasonable to suppose that he had not been able to see Alice alone, or that by some mishap the call had proved unpleasant. But ordinary inquiries as to the health of the Fletcher family failed to throw light on the situation. So Mrs. Morton, after waiting a day or two, probed.

"There's one Freeport attraction that you haven't seen, Uncle Frank. It's an ice-bed about eight miles up in the mountains, a charming drive. Don't you think it would be pleasant to make up a nice, quiet little party, you and Ralph and I, and perhaps Alice

Fletcher for the fourth seat? I am getting a little tired of crowds, myself."

"I think we'll let it wait awhile, Adelaide. I believe I'm getting a little bit bored with picnics, too."

"Oh, dear, and I thought you were having such a good time in Freeport! I wonder if there's anything else I can do for you?"

"I have had a capital time. I've no fault to find with Freeport, I assure you, my dear."

"But you can't find any fault with Miss Fletcher. She is charming. I am afraid Ralph and I are stupid when you see so much of us."

"Indeed, my dear, you have both been very attentive, and have made it delightful for me. But I—that is—I may as well make a clean breast of it, Adelaide. Miss Fletcher has refused to marry me."

"Refused—yon! I had begun to think she would be—well—disappointed if you went away without speaking. Pray, what reason did she give?"

"She—ah, let me think. She thanked me, and said she considered my proposal a great honor, naturally. And she was sorry, and all that sort of thing, you know; and—well, the upshot of it was, she was engaged once to some fellow that's dead, and she won't ever want to marry again, or she thinks she won't; and I must say she's getting old enough to know her own mind. She seemed to think I knew all about it, and she was very much surprised at my proposal. I don't see anything surprising myself in a man of my position proposing to an agreeable woman of good family. I certainly cannot be expected to know about the juvenile love affairs of a woman I've only seen six weeks."

Mrs. Morton struggled with her facial muscles, and succeeded in saying, in a sympathetic tone:

"Oh, uncle, I am so sorry! I saw that you were interested in Miss Fletcher, and such a result is very surprising. And I did want you to stay in Freeport all summer."

"I don't know why I should leave Freeport," the uncle replied, briskly. "I have a great many friends here besides the Fletchers. Mrs. Dutton and her daughter, for instance, who seem to be very charming people."

"Certainly, uncle, Freeport people think a great deal of you. I only thought that when this came out it might be a little disagreeable."

"I don't see why it should come out at all. I requested Miss Fletcher, as a favor to me, not to mention the incident for the present."

Mrs. Morton was dumb with surprise, and her uncle continued:

"The fact is, I'm in a rather peculiar position, Adelaide. Tom and Jack are good boys, and since their mother died we've been more like chums than father and sons. I didn't want to spring any surprise on them, so I asked them a week ago how they would like a step-mother. They wrote straight back to 'sail in,' as they put it, and they would do everything to make it pleasant for both of us. Then Tom added a postscript, hoping that I had picked out a girl with a good temper. Don't you see how awkward it is? I don't want to have those boys saying to each other that their father got left." [Adelaide blessed her lucky star that Ralph had never heard her uncle talk in this way.] "On the other hand, I do want a wife, and I'm not silly enough to suppose that there's only one woman in the world who will do. I admire Miss Fletcher greatly, but I think I detect certain signs of stubbornness in her character that would not be agreeable to live with. I am quite sure that that pretty Miss Dutton, for instance, would get along much better with the boys."

Mrs. Morton did not trust herself to drift into a confidential chat with her husband for three days after this interview.

Nearly a fortnight later Mrs. Eaton rushed up to Mrs. Morton's room, exclaiming:

"Say, do you know—waal I s'pose you do, secin' it's your folks—but I bain't only jest heard that the Duttons was makin' ready a big party in honor o' Belle's engagement to Mr. Underwood. They say Mis' Allen's doin's will be pnt 'way in the shade."

"There are just as good fish in the sea," sang Dr. Morton in his office downstairs.

"No, I hadn't heard of the party," Mrs. Morton replied. "It seems a little sudden. The engagement is only two days old."

"I reckon they ain't goin' to let no grass grow under their feet this time. This don't look much as if they'd have kept so amazin' still about Abner McNaughton, if Belle had ever really had him, now doos it?"

"I hope this engagement isn't going to bring that story up again. I think we have all had enough of it."

"Waal, I hope so, I'm snre. But then it will. Folks will naturally say she's consolin' herself pritty soon; an' then the Duttons will say Alice would 'a' done the same thing if she'd had the chance, an' there yon have the whole fight back again. The wunst of it is, nobody knows that Alice wouldn't. The best o' women is amazin' qneer when it comes to gittin' married."

"My uncle was quite attentive to Miss Fletcher at one time. Did you ever think that perhaps he might have proposed to her, if she had encouraged him?"

"Waal, no; to be right down honest, Mis' Morton, I hain't. You see, men are all alike—no disrespect to your uncle—but they can't

none of 'em see an inch ahead o' their noses. Belle's the sort o' girl men take a shine to, an' Alice ain't. I knew 'twas all up with Alice when I heard Belle a-singin' to him in the boat at the picnic. The 'hain't more'n one man in a hundred got sense enough to wait so good a girl's Alice Fletcher, an' that one man was Abner McNaughton. I shall always b'lieve she was engaged to him. She showed she thought a sight o' him along at the last, an' I know she'd cut her hand off rather'n do that for any man that didn't h'long to her."

Not until after the Dutton-Underwood wedding did Mrs. Eaton learn of Miss Fletcher's further proof of devotion to her dead lover. Although that wedding, with its attendant glories, is now an old story, only two or three Freeporters know why the bridegroom turned suddenly red under Miss Fletcher's cordial congratulations.—*Hamilton Ormsbee, in Harper's Bazar.*

THE SENSIBLE HOUSEKEEPERS OF THE FUTURE.

I wish that it were in my power to persuade young girls who wonder what they shall do to earn their living, that it is really better to choose some business that is in the line of a woman's natural work. There is great repugnance at the thought of being a servant, but a girl is no less a servant to the man who owns the shop where she stands behind the counter all day than she is where she waits upon the table or cooks the dinner in a pleasant house; and to my mind there would not be a moment's question between the two ways of going out to service. The wages are better, the freedom and liberty are double in one what they are in the other. If, instead of the sham service that is given by ignorant and really overpaid servants to-day, sensible New England girls who are anxious to be taking care of themselves and earning good wages, would fit themselves at the cooking schools, or in any way they found available, they would not long wait for employment, and they would be valued immensely by their employers. When one realizes how hard it is to find good women for every kind of work in our houses, and what prices many rich people are more than willing to pay if they can be well suited, it is a wonder more girls are not ready to seize the chances. It is because such work has been almost always so carelessly and badly done that it has fallen into disrepute and the doers of it have taken such low rank. Nobody takes the trouble to fit herself properly, but women trust to being taught and finding out their duties after they assume such positions—not before.—*Sarah Orne Jewett, in Congregationalist.*

SINGING FOR LUNG DISEASES.

At the present era, when physical culture is a part of the curriculum of our most intellectual schools, and is so generally regarded as a necessary element toward supplying and maintaining the sound body for the sound mind, it is worth while to consider a recent statement of eminent physicians that the mere exercise of singing is a great help toward the prevention, cure or alleviation of lung diseases. In the incipient state of such diseases it is even said to be a powerful aid to a cure. It is, indeed, somewhat curious that the medical fraternity have not exploited the theory of lung exercises by singing more fully heretofore than they are now doing, for the action of calisthenics in strengthening muscular tissues has for years been a universal practice, although, as a matter of fact, the mere physical exercise of singing brings into play an extraordinary number of muscles that can hardly be suspected of action in connection with the throat expansion. It was disclosed by statistics in Italy, some years ago, that vocal artists were usually long lived and healthy, and that brass instrument players, who bring their lungs and chest into unusual activity, have not had a consumptive victim among them. No matter how thin or weak the voice, children or young people should be encouraged to indulge in song. There can be no happier medicine, and if hearers sometimes suffer, they should be encouraged and strengthened to bear the infliction in view of the good it may occasion.—*New York Tribune.*


A FEW WORDS ON INDIGESTION.

It is not our intention to give the history of the Canadian, Alexis St. Martin, to whom a shot through the stomach brought fame, nor to tell you how long it takes to digest Strassburg pie or sourkrout. No doubt you know by experience. It has been well said: "Some men never seem to know they have a stomach." However, we do not write for this fortunate class.

The celebrated Purdon thoroughly "digested" the Laws of Pennsylvania. But there are few Purdons. The old Romans do not seem to have suffered from indigestion. The gastronomic feats of our Tontonic fore-fathers are almost incredible, and we read the accounts of "Homeric Banquets" with a feeling approaching to incredulity.

Our manner of life has impaired our digestive powers. We do not spend enough time in the open air; we rise early and retire late to rest. We bolt our food and do not rest afterward. To these and other incidents of a high degree of civilization is to be traced one of our most common maladies, Dyspepsia. We shall not attempt to portray the mental or bodily condition of its victims. We shall simply point out a way of escape, and refer you to a work, giving a full account of many cures, with abundant testimonials, which you can verify by writing to the patients themselves.


Write for our Treatise on Compound Oxygen. It is a carefully written medical work, giving the mode of action, nature, results, and, in short, a full account of this great vitalizing agent. No other genuine. Address DRs. STARKEY & PALEN, 1529 Arch St., Phila., Pa., or 120 Sutter St., San Francisco, Cal.



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Our Household.

WHAT SHOULD A YOUNG MAID DO?

Now what should a young maid do?
If when walking in the lane,
There should come a gust of rain,
And she met a lad she knew,
With an umbrella good and new,
And just wide enough for two—
Now what should a young maid do?
Yes, what should a young maid do?

Now what should a young maid do?
If his arms should be misplaced
And should wander 'round her waist,
And when walking two by two,
Safe and dry and hid from view,
He should whisper, "I love you."
Now what should a young maid do?
Yes, what should a young maid do?

Now what should a young maid do?
If, when too much dashed to speak,
He should kiss her crimson cheek
And a thousand vows would give her,
Saying he would love her ever,
And protect her ever, never—
Now what should a young maid do?
Yes, what should a young maid do?

Now what did the young maid do?
Why, she waited in the lane
Till the young man came again,
And she kissed him for his mother,
And he kissed her for her brother,
And she gave him still another.
What else could the young maid do?
What else could the young maid do?

—Boston Home Journal.

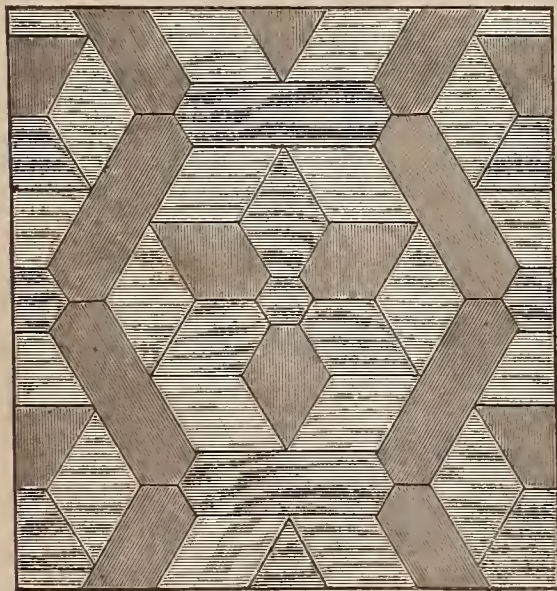
WHAT'S FOR SUPPER?

That oft-repeated question. Isn't every house mother in the land tired of hearing it asked? Supper seems an unimportant meal to some who are satisfied with tea, dried beef, bread and butter and prunes; but to one who has worked hard all through the day, hurried through breakfast, hurried through dinner, it does seem as if supper, after all, was the most restful, and if it is appetizing and tasty, it can be enjoyed with more leisure.

When I am in a quandary I often answer, "Oh, black-eyed beans and bread and butter." I sniff around the cupboard; there's nothing. My, how children do get away with everything! Well, then, I must cook something new. I take a can of corn, put it on to cook in a porcelain kettle with a little hot water, seasoned well, and a little butter added. After cooking fifteen minutes, I add two well-beaten eggs, flour enough to thicken well, then dip out in spoonfuls and fry in hot lard, not very deep. When brown, remove to a hot platter.

Cove oysters are not to be despised as a supper dish for summer use. Pour off the liquor in the cans and add the same quantity of milk; season well, and add a piece of butter; let it get quite hot, then add the oysters; when they begin to curl, shake in a little flour, pour over toasted bread upon a platter.

Waffles are very palatable on a rainy night. Somehow they always tasted



BRUNSWICK STAR PATTERN.

better than, and one doesn't want much else with them but coffee. If you get a new iron, grease it well and burn it off several times before using, and then wash it well. Don't attempt waffles in a brand new iron, or you will throw away the whole thing, iron and all, before you've got done with one round. Grease both sides of the iron, and let it get pretty hot before using. This is my recipe, and it is a good one: Beat the yolks and whites

of two eggs separately; one half cup of butter, four cups of flour, milk sufficient for a thin batter, two teaspoonfuls of baking-powder put in the batter last, then the whites of the eggs. You will find the addition of the baking-powder last, to either cakes or batters, quite an addition, as it does not lose its lightness by being beaten so long. It doesn't need much after it is added, and will insure lighter cakes. This recipe is for a small family, and when doubling it, do not double the flour or baking-powder; use one more spoonful of the powder, and flour to make the batter of the right consistency.

CHRISTIE IRVING.

PATCHWORK.

[Continued from last issue.]

BRUNSWICK STAR PATTERN.

The Brunswick star pattern is suitable for quilt or crib cover, or any large piece of work, being bold and clear in design. It may be executed with silk, satin and velvet scraps, or with washing material. Four different shaped diagrams are required, as the following full working sizes show:

Begin by making a number of six-pointed stars, each having a hexagon in the center, which hexagon may be either darker or lighter in shade than the star sections by which it is surrounded, and may be of fancy silk, or embroidered with a leaf or tiny flower. The star may be three sections of one color, mingled alternately with three sections of a contrasting color, or with all six points alike, according to taste. Around each star sew lozenge-shaped pieces of a dull, neutral



FULL-SIZE WORKING DIAGRAMS FOR BRUNSWICK STAR PATTERN.

shade. When a number of these six-sided patches are made up, select the prettiest for the center, and group the others around it, arranging the different colors as nearly as possible equi-distant one from another. The parallelograms are to be self-colored, yellow, if possible, throughout the entire piece of work, and must now be sewn as a dividing line between the star sections, as seen in illustration.

AMERICAN LOG PATCHWORK.

American patchwork, or log-house quilting, as it is called in Canada, differs from ordinary patchwork in that the sections are cut in strips, and instead of being sewn are run one upon the other from the central square, and turned down so no stitches are visible. The strips are all the same width, but vary in length, requiring to be longer as they get further from the center of the pattern. One half of the design is carried out in light shades, the other half in dark. Cut a number of square pieces of cheap calico for foundations, each measuring seven inches square. Next you will want some pale cream or very light silk patches, $1\frac{1}{4}$ inches square, then colored silk strips each $1\frac{1}{4}$ inches wide, and in seven different shades of one color; for instance, the tiny square, pale cream, and the strips shading from the lightest pink to a deep, rich crimson, two strips of each of the seven shades and two strips of black; they had better be as long as possible to begin with, for as you work you can cut off any surplus quantity. If you have to purchase material, it will be wise to buy ribbon rather than piece silk; you get the right width without cutting to waste, and there is no raveling.

Place the cream square exactly in the center of the foundation lining, and tack it evenly thereto. Take the first strip, the lightest shade, and placing the edge of it

upon one edge of the silk square, run both together upon the lining at a quarter-inch margin off the edge, and cut off whatever portion of the strip remains beyond the piece required to cover the end of the square; turn this little strip over and press it flat with the thumb. In the same manner run a similar strip along the left side of the little square and over the end of the strip first joined on, turn this over and press it down. Run the same shade along the remaining side of the central square, and over both ends of the strips already sewn on, and press this down. The result is a perfect square, two sides light and two sides dark.

Use the second lightest shade, and run along the side to the left of the last piece (that is, on the same side of the little square as the first strip was run upon), the same shade to the left of that again; then run the sixth shade to the left of that, and the same to the left of that again. This makes another perfect square.

Take the third lightest shade and run along each of the two sides to the left of that last put on; then the seventh shade (the darkest), and run on the two sides to the left again, and you have another square. Next use the fourth shade along two sides, and then black upon two sides.

This completes the first portion of the pattern; make three more pieces exactly similar; then stitch the four squares together, making the light shades meet each other in the center. It will give the effect of a bright diamond being placed upon a dark square. Other shades can be employed at pleasure for other squares. The pattern can be enlarged by working on two or more strips of color and using three or four black strips on the outside instead of one only; or, if required smaller, it can be reduced by employing narrower strips.

HELENA PATCHWORK.

This is a lovely pattern for drawing-room cushions and other best pieces of work. Four boxes appear as if set on edge with the lids sloping towards each other; the lids are a square of pale blue, or any light colored silk, the four in a group alike; but whatever color is chosen for the lids of different groups, the sides of the boxes are in every case to be black. The pointed oblongs should be made of bright color, with a branch of tiny leaves embroidered on each, springing, as it were, from the center. The little crosses are composed of five sections, the center, which is the largest, to be of a darker shade than those surrounding it. Thus five different shapes are employed in the formation of the design, as given in the diagram, and though sufficiently moderate in size, they make a good, bold pattern when sewn together.

KALEIDOSCOPE PATCHWORK.

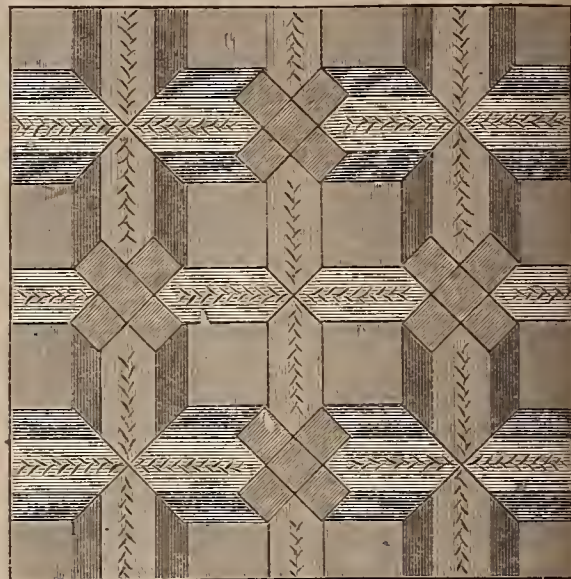
It is perfectly geometric in design, and the sections are of three shapes only—small squares, triangular-shaped pieces and elongated diamonds. The diamonds can be embroidered with feather stitch from end to end, small stitches at the points and gradually widening in the center. Only three colors should be used, the darkest employed for the angular sections, four of which are allotted to each square, and these are, in turn, surrounded by four diamonds. As a kind of optical delusion, this is a very attractive pattern for a sofa-cushion.

EVA M. NILES.

Read our Great Offer on page 315.

HOME TOPICS.

INSECT PESTS.—As warm weather advances, the housekeeper's vigilance and warfare against insect pests needs to be increased. With wire or netting screens for every door and window, one can keep the house comparatively clear of flies, but great care should also be taken that noth-

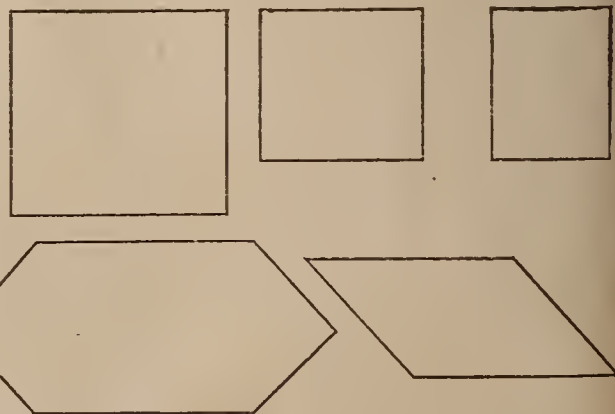


HELENA PATCHWORK.

ing is allowed to remain near the house that will attract flies. Impress the fact upon every member of the family that the screen doors must be kept shut, or you may go into the kitchen some day and find the screen door fastened open, with the flies coming and going, mostly coming, at their own sweet will.

Country housekeepers are not often troubled with roaches or water-bugs, but they are a great pest in town houses. A sure and safe remedy for them is powdered borax. It does not kill them, but it does effectually drive them away. Have the borax scattered over the shelves of the pantry and closet before the papers are put on, and into every crack and crevice where the bugs can hide. I moved into a house once, and, upon going into the kitchen in the evening, I found it literally swarming with water-bugs of all ages and sizes. One pound of borax cleared them out entirely, and I never saw one in the house afterwards. I have had the same success in driving away ants with borax. Prof. Riley, U. S. entomologist, recommends Buhach or Persian insect-powder for all insects that infest the house. I have found it of inestimable value as a preventive of moths and that other terror of housekeepers, bed-bugs, and have never had the least trouble with either since using this powder, but did not find it as efficacious with water-bugs as borax. Of course, thorough cleanliness and "eternal vigilance" is also necessary.

FURNITURE POLISH.—A furniture dealer told me that the best preparation for restoring furniture to its original freshness is a mixture of equal parts of linseed oil and turpentine. Use the raw linseed oil. Dust the articles to which it is to be applied, dampen a woolen cloth with the mixture and rub every part thoroughly,



FULL-SIZE WORKING DIAGRAMS FOR HELENA PATCHWORK.

then polish with a piece of chamois-skin. Chamois is nice for dusting fine furniture, polishing mirrors and windows, etc. When it is soiled, it may be washed, and if it then seems stiff, rub it between the hands until it is soft again.

THE CHILDREN'S SUNDAY.—Whatever the trials and cares, the work and worry of the rest of the week, try to make Sunday a bright and happy day. Begin Sunday on Saturday night by having the clothing, and everything needed on Sunday morning, laid in readiness for each

child to dress. Then you will not hear, "Ma, where is my hair-ribbon?" or "my necktie," or "my handkerchief," as the case may be. As soon as they are old enough, teach each child to see that their things are in the proper place. I think it best for the children to put on their Sunday clothes when they first get up, as it is less trouble and helps to give them the feeling that Sunday is better than other days. A large apron will prevent any accidental soiling. Do not encourage the habit of sleeping later than on other mornings, but have the breakfast at the usual time, so there need be no hurry or danger of being late to Sabbath-school, and, if possible, one or both parents should go with the children. Accustom them early to stay to church, and they will grow up with the habit of church going.

Be sure and have a good Sunday dinner, not necessarily a hot one, but with some dish that the children are especially fond of, and try to give the table a holiday look—something different from its everyday appearance. The after-dinner time is the most trying one. While I would not advocate the old Puritan idea of perfect quiet, no play and an air of the utmost solemnity, yet I would make the day wholly different from other days. Give plenty of good reading to those who can enjoy it. Read to and tell them stories. Let them have some toys especially devoted to Sunday plays. Be never cross or stern on Sunday, but let it be a day when smiles and happiness reign. If papa wants an after-dinner nap, let him take it, and then, later, he can take the children for a walk, or visit and tell stories with them while mamma has a quiet hour by herself. In many families, this hour with papa is a rare treat, as he is too busy during the week to give much time to the children.

If you have a musical instrument in the house, use it for sacred music only on the Lord's day. Before separating for the night, have a little praise and prayer meeting. Encourage each child to join in singing, and let the prayer be short and simply worded, asking the Heavenly Father's care and guidance for each one during the week. Then let all join in that sweetest of all prayers, "Our Father in Heaven." A little bedside talk before the good-night kiss for each little one is a fitting close for such a Sabbath day.

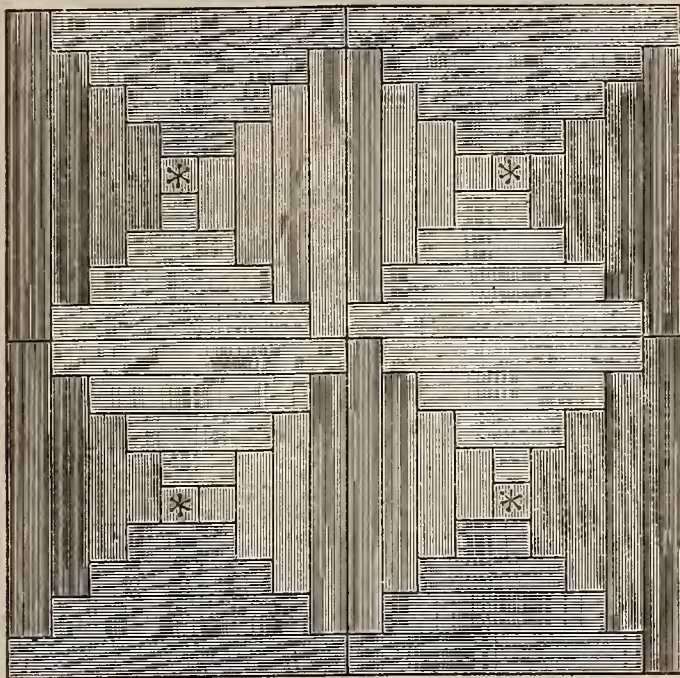
MAIDA McL.

REFORM.

How many sisters are in favor of a reformation? Let me explain. There are so many who think that girls should be kept in ignorance of what is expected of them until they are taught by actual experience. I say that is wrong. Teach her what she should know, and when she is

until they could wash and dress an infant successfully, in a given length of time, and know other things accordingly. That rule should be adopted in other countries. Of course, I mean when the girls are of a marriageable age.

What has brought this to my mind now, and so impressed me with the necessity of such knowledge, is the case of a young mother who knows nothing whatever about caring for her babe. She depends entirely on others. They make the same mistake so many make, that whenever it cries it is hungry, and "dope" it with gin and other things until it is in misery from overfeeding. "The child won't nurse," says the mother. Of course not, when it



AMERICAN LOG PATCHWORK.

is full of gin, etc.; it will have no desire to nurse. It is the duty of every woman to read and study and learn all they can, so that when they become mothers they will not be entirely ignorant.

I know a woman who suffered untold agony with her breasts when the child would nurse. She could scarcely believe I had had no trouble in that respect. "Why," said she, "they used to have to hold me in bed while the child nursed, and the blood would run out of the child's mouth. Now, that is not necessary. Get of tannic acid, 10 grains; glycerine, ½ drachm; spermaceti ointment, 7 drachms. Any druggist can fill it for you; it cost me 15 cents, and is worth \$15. Rub this on the nipples night and morning at least a month before confinement; it will harden them. I used in connection with this green tea and alum. Take a teaspoonful or more of green tea, put half a cup of water on it and let come to a boil, then add a lump of alum; when cold, wash the nipples with this. You can use the ointment a few nights and then the tea a few nights. Any one who has suffered with sore nipples will appreciate the above recipes

ELLEN.

A GOOD RECIPE FOR SOAP.

Seeing so many good recipes in the FARM AND FIRESIDE, I concluded that the editors were really glad to get anything that was really good, or that would be of value to their lady readers. I have a soap recipe that is worth much to ladies living on these broad, western prairies, and send it for the benefit of those who do not have wood ashes to make soap with. I have used it for two years, and have always had good soap at about one fourth (or less) the cost of other soap, and it makes the clothes look nice:

Dissolve one can of concentrated lye in one gallon of soft water; put five pounds of clear grease, or five and one half pounds of scraps, and one gallon of soft water in a kettle and bring to a boil; then stir up the lye and pour it in the grease. Boil one hour. It will generally be soap long before the hour is up, but I keep it boiling the full hour; then add one fourth pound of borax and boil until the borax is all dissolved, then I add a little over half a tea-

cupful of common kerosene, let boil up a minute, and add about three pints of cold, soft water; stir up well and take from the fire. If you have a tight box to cool it in you can cut it in bars and dry it. I put mine in a keg and cut it out as I want to use it. The kerosene can be left out if desired, but I like it best with the kerosene in. I think Lewis' lye the best, but have used Babbit's with very good success.

Do not be afraid to try this, for if you follow directions you cannot fail to have good soap. I had spoiled so much stuff trying to make soap with concentrated lye I thought I never would try again; but when I heard of this recipe, it was so much different from any I had ever tried before that I concluded to try once more, and am perfectly satisfied with the result. It neither makes the hands rough and chapped nor injures the clothes. To keep from shrinking, make it in the dark of the moon. PEGGY SHORT.

Algona, Iowa.

A PRETTY SOFA-PILLOW.

Make your pillow any size to suit. Cover both sides with satin of same color. Get two rolls of two shades of No. 7 ribbon that will harmonize with each other and also with the satin. Cut into 9-inch strips and fasten the ends; gather one edge, draw up tightly and fasten. Put four

wheels of one color in the center to form a square, eight of the other color around the four, and so on, alternating colors till large enough to cover the satin. Finish the edge with fancy cord. You can commence with one wheel in center, and have a six-sided cushion, which would be pretty finished around the edges with puffed satin, and the ribbon wheel cover laced to back over the satin with silk cord. These wheels make pretty tidies, cushions, etc., using narrower ribbon.

MRS. J. H. HOWARD.

CONTRIBUTED HINTS.

NOODLES.—Beat any number of eggs, according to the amount wanted, into a bowl, beat thoroughly, then knead very stiff and only roll out the amount of one egg at a time into a thin, very thin, sheet, then place in some convenient place to dry. When wanted, cut very fine; they will keep for months if properly dried and taken care of.

CHEESE.—There have been a number of recipes for using cheese, but as I have not seen my recipe, which I have used for years, I will also send it, hoping some one will try it:

Boil one cup of rice until soft, season with salt and pepper; then, in a small dripping-pan or pudding-dish, place a layer of rice and a layer of cheese crumbs until the rice is all used; on top, a layer of cheese and cracker crumbs.

M. M. T.

May I, too, add my "mite" by telling you of a pudding we all like very much? In summer we use fresh berries, and in the winter we drain the juice from canned berries, and like it equally well:

COTTAGE FRUIT PUDDING.—Put into any shaped baking-dish desired, about an inch in depth of berries of any kind, then pour over them the following ingredients well stirred together:

1 egg,
1 cupful of sweet milk,
1 cupful of sugar,
3 cupfuls of flour,
1 tablespoonful of butter and
2 teaspoonfuls of baking-powder.
Bake until the crust is done. A. W.

LEMON PIES.—One heaping tablespoon-

ful of corn starch put in a teacup and wet with cold water, then fill the cup with boiling water to cook it; two eggs, the yolks; one lemon, grate the rind and squeeze the juice out; one cup of sugar; take the whites of the eggs and beat them to a stiff frothing; one half cup of sugar; when the pie is baked, spread this over the top and put in oven to brown.

PUMPKIN PIE.—

1 pint of pumpkin after it has been through the colander,

4 eggs,
1 teaspoon of cinnamon,
1 teaspoon of ginger,
1 teaspoon of salt,
3 pints of milk,
1 heaping big spoon of wheat flour,
3 cups of sugar.

This makes three pies.

FRUIT CAKE.—

2 eggs,
1 cup butter,
2 cups raisins, chopped fine,
1 cup sweet milk,
1 cup molasses,
2 cups brown sugar,
1 small teaspoon cloves,
2 teaspoons cinnamon,
1 small teaspoon soda,
½ small nutmeg.

Put in a little citron.

FILLING FOR LAYER CAKE.—One cup of granulated sugar, with a little water to moisten it. Boil until no steam arises. Stir in the beaten white of one egg, then add one cup of chopped raisins. Put between layers. Chop the raisins very fine.

SADIE BELTON.

EASY CAKE.—

6 eggs,
15 ounces of flour,
1 pound of sugar,
½ pint of water,
1 tablespoonful of baking-powder,
½ pound of butter.

Cream butter and sugar together, break one egg and mix well, add a little flour and mix well, but do not beat, only stir. Add eggs and flour alternately till all are in, then add water. Sift baking-powder with flour. Bake in layers, and use any filling you prefer.

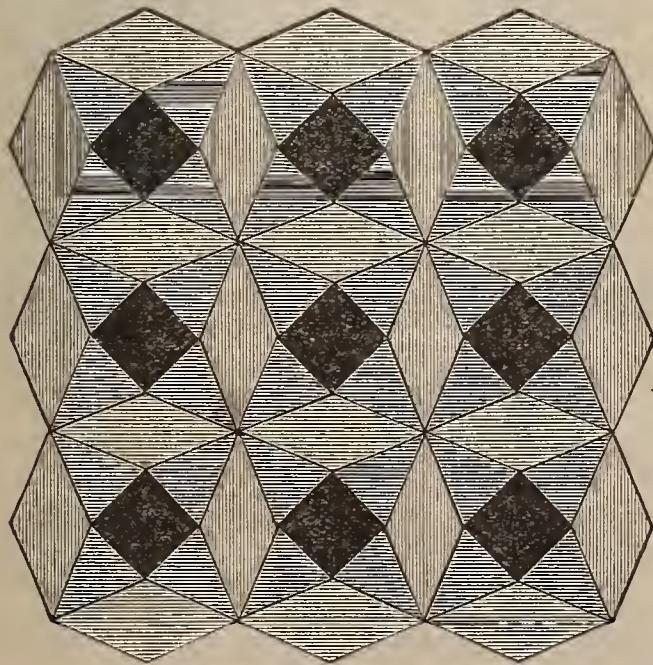
PLAIN CAKE.—

4½ cups flour,
3½ cups sugar,
1½ cups butter
1 cup milk,
6 eggs.
Season.

This is for those who prefer cake without baking-powder.

TO PRESERVE EGGS.

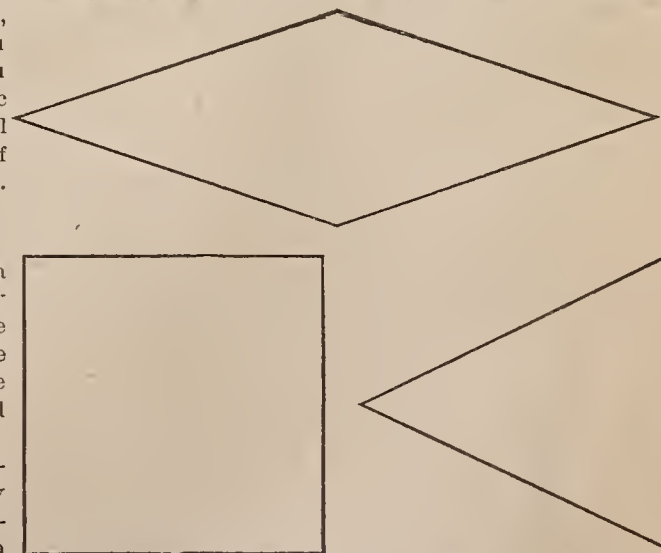
Here is a suggestion from a lady who claims that eggs can be preserved for a year or more if the pores of the shell are closed. Owing to the porosity of the shell, a fluid is constantly passing out, and this evaporation is greater in warm weather than in cold. To stop this, the eggs need



KALEIDOSCOPE PATCHWORK.

married she will know what to do when occasion presents itself.

So many girls think it a disgrace to know how to care for a babe, and even blush at the mention of one. Teach them that it is no disgrace, but an honor to know how to care for the gifts of God. That is our mission on earth, and the more we know the better we can care for them. I have read of a certain country where the girls were not allowed to marry



FULL-SIZE WORKING DIAGRAMS FOR KALEIDOSCOPE PATCHWORK.

not be smeared with any fresh grease. Wipe off any surplus oil, then set them on the small end in bran in close layers and keep them in a cool, but not freezing, place.

HOW ABOUT THE PRUDENCE of allowing a cough to run on, rasping the Pulmonary and Bronchial organs, when that approved and speedy remedy, Dr. D. Jayne's Expectorant, can be obtained from any Apothecary.

Our Sunday Afternoon.

"WE WOULD SEE JESUS."

WE would see Jesus! not displays
Of glittering gems of thought,
Nor splendid literary lore,
Nor works that man hath wrought.
If these shall hide his glorious face,
If these his love conceal,
Oh, take the gilded charms away;
Let Christ his love reveal.

We would see Jesus! Him whose life
To ransom us was given;
Who toiled and suffered, wept and died,
That we might live in heaven.
Elaborate sermons—beautiful—
Rich in sublimest thought,
Adorned with rhetoric's loveliest flowers,
Are things to us of naught.

We would see Jesus! 'tis his face
That thrills our souls with joy;
And his own matchless charm revealed
Gives bliss without alloy.
Oh, give us Jesus! tell his grace,
Proclaim his wondrous love;
Set forth his charms, tell of his power,
'Tis this all hearts will move.

A mystic charm is in his name,
Mightier than magic spell;
The thrilling story of his love
On sinners' hearts will tell.
We would see Jesus Christ, the Lord,
Oh, never may we say,
As loving, weeping Mary said,
"They've taken my Lord away!"
—Earnest Christian.

MY FATHER WAS GOD.

HOWEVER degraded men and women may be, and though they may have foundered on the rocks of crime and sin, and though we shudder as we pass them, nevertheless, there is something within us that tells us they belong to the same great brotherhood and sisterhood of our race, and our sympathies are aroused in regard to them. But gazing upon the swiftest gazelle, or upon the tropical bird of most flamboyant wing, or upon the curve of grandest courser's neck, we feel there is no consanguinity—the grandest, the highest, the noblest of them ten thousand fathoms below what we are conscious of being. It is not that we are stronger than they, for the lion, with one stroke of his paw, could put us into the dust. It is not that we have better eyesight, for the eagle can deery a mole a mile away. It is not that we are fleet of foot, for a roebuck in a flash is out of sight, just seeming to touch the earth as he goes. Many of the animal creation surpassing us in fleetness of foot, and in keenness of nostril, and in strength of limb; but notwithstanding all that, there is something within us that tells us we are of celestial pedigree. Not of the mollusk, not of the rhipid, not of the primal germ, but of the living and omnipotent God. Lineage of the skies. Genealogy of heaven. I tell you plainly that if your father was a muskrat, and your mother an opossum, and your great aunt a kangaroo, and the toads and snapping turtles were your illustrious predecessors, my father was God. I know it. I feel it. It thrills through me with an emphasis and an ecstasy which all your arguments drawn from anthropology, and biology, and zoology, paleontology, and all other ologies, can never shake.—Dr. Talmage, in Observer.

KEEPING AT IT.

It is a great mistake to suppose that the best work of the world is done by people of great strength and great opportunities. It is unquestionably an advantage to have both these things, but neither of them, quoting from *Manufacturer and Builder*, is a necessity to the man who has the spirit and the pluck to achieve great results. Some of the greatest work of our time has been done by men of physical feebleness. No man has left a more distinct impression of himself on his generation than Charles Darwin, and there have been few men who have had to struggle against such prostrating ill health. Darwin was rarely able to work long at a time. He accomplished his great work by having a single aim, and putting every ounce of his force and every hour of his time into the task

which he had set before him. He never scattered his energy, he never wasted an hour, and by steadily keeping at it, in spite of continual ill health and of long intervals of semi-invalidism, he did a great work, and has left the impression upon the world of a man of extraordinary energy and working capacity. Success is rarely a matter of accident; always a matter of character. The reason why so many men fail is that so few men are willing to pay the price of self-denial and hard work which success exacts.

LAW'S POWERLESS.

This, from Francis Murphy, is worth reading and remembering:

"I took no part in the Pennsylvania fight, because I do not believe that the evil can be legislated out of existence. I wish that it could, just as I wish that every man might be a real Christian. I think the world would be better for it. The plan of making people Christians by law has been tried before now, and it wasn't altogether a success. I think that prohibition meets with the same objections. I don't want to be considered as opposing the prohibitionists, but I simply believe that the opposition that they arouse by saying to men 'You shall not sell,' and 'You shall not drink,' leads men to drink who would not drink otherwise. Men must be led and not driven. Nine out of ten drunkards can be reclaimed by kindness and patience, and until the man is master of himself you cannot keep him from drinking by law."

If one half the enthusiasm and money now spent in senseless schemes of restriction were expended along the line here laid down, our generation would see more genuine and lasting temperance reform than can be accomplished through prohibition and high license in a thousand years.—*Wine Trade Circular*.

A MENTAL PICTURE.

Our best habits, or methods, or attainments, often owe more to a single mental picture than to all the formulas of rules, regulations and principles that may be imposed upon us. "Whenever I write anything," said one who had been commended for his terseness and brevity, "the vision of my father rises before me, and I see myself looking over his shoulder in astonishment as he draws his pen through word after word and line after line, cutting out what to me at first seemed indispensable." All the rules of composition and rhetoric were of comparatively small import when that one vision was dominant. And so the vision of what to us seems our most familiar and ordinary habit of life, may be the making or breaking of those who come after us.—*S. S. Times*.

A KIND WORD.

A kind word costs but little, but it may bless the one to whom it is spoken all day. Nay, have not kind words been spoken to you which have lived in your heart through years, and borne fruit of joy and hope? Let us speak kindly to one another. We have burdens and worries, but let us not therefore rasp and irritate those near us—those we love, those Christ would have us save. An exchange presents this thought in these impressive words: "Speak kindly in the morning; it lightens the cares of the day, and makes the household and all its affairs move along smoothly. Speak kindly at night, for it may be that before dawn some loved one may finish his space of life for this world, and it will be too late to ask forgiveness."

PRAYER AND GODLINESS.

Archbishop Leighton says of the molding power of prayer: "Prayer sets the soul particularly near to God in Jesus Christ. It is then in his presence, and, being much with God in this way, it is powerfully assimilated to him by converse with him; as we readily contract their habits with whom we have much intercourse, especially if they be such as we sincerely love and respect. Thus the soul is molded further to the likeness of God, is stamped with clearer characters of him by being much with him; becomes more like God, more holy and spiritual, and, like Moses, brings back a bright shining from the mount."

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Our Farm.

THE POULTRY YARD.

Conducted by P. H. Jacobs, Hammonton, New Jersey.

FRESH EGGS.

No one knows the difficulty experienced by those who are willing to purchase strictly fresh eggs in procuring them, especially persons living in the crowded cities. They can buy eggs, it is true, but they are compelled to do so with a confidence in the merchant that the eggs are fresh; and yet the merchant, with all the care he may exercise, knows nothing of the stock he has on hand, other than the fact that he, in turn, places his confidence in those who supply him. Despite the care that may be shown by all parties, stale eggs will put in an appearance, and when such is the case, all parties concerned are more or less disgusted, and the result may be an injury to the merchant and but few eggs purchased by the customer. Destroy the confidence and prices decline. When a reliable party produces eggs on the farm, and makes it a point to sell them daily, so as to render it an impossibility to make any mistake, he can build up a custom that will be permanent, and can also command a price above the regular market quotations. But such person cannot afford to buy eggs from other parties also. In all cases where the poultryman has included eggs from other parties, he eventually meets with disaster. The poultryman who wishes good prices, and who can, in time, command his trade, must not attempt to sell eggs from any yards but his own. If he cannot fill orders, he should not attempt to do so with eggs from other yards. In this way better prices will be obtained and confidence retained. We can point to parties who sell eggs at sixty cents a dozen the entire year. The eggs are no better than some that are sold at twenty cents a dozen, but the parties supplied by them know that they will never incur any risk of having a stale egg among the lot. These men really sell forty cents' worth of confidence with every dozen eggs, for it is, after all, the reliability of the parties that secures for them the higher prices.

BOARD FLOORS FOR CHICKS.

Our experience the past season teaches us that while board floors are the best for young chicks until they are four weeks old, preventing gapes and losses from dampness, the ground is better after that age. We found that board floors and bottom heat in brooders causes leg weakness; the chicks, becoming drawn up, eat but sparingly, and if they do not die, they make but little growth. This question is one that has agitated poultrymen for a long time, but in a series of experiments made this season with several lots of chicks, all fed alike and treated alike in every other respect, we find that chicks that are allowed on the ground thrive better than those kept on boards, although for very young chicks board floors are better. After a chick is a month old, it will then be past the danger stage, and can endure the cold outside, to a certain extent, if the weather is dry, but on damp days, in winter, it should be kept up in the brooder-house.

BEST FOOD FOR YOUNG CHICKS.

Although many foods have been recommended for young chicks, we have always had excellent success with stale bread and oatmeal, fed in the dry condition, until the chicks are ten days old, when they may then be given cracked corn and wheat screenings, also. Too much soft food is not wholesome for them. Chicks prefer dry food, and it serves the purpose better and entails less labor in preparation. Corn bread alone is insufficient, but it may be improved when dipped in milk.

PRICES OF BROILERS.

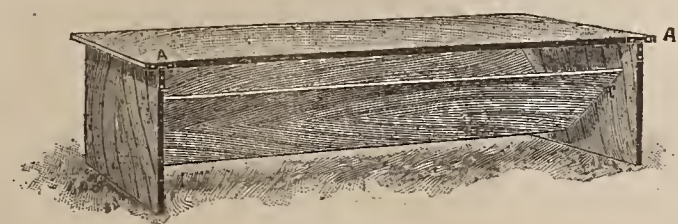
Prices in New York were thirty-eight cents per pound up to the last week in May, which, though not quite up to the year previous, are more regular, as they have fluctuated but little. Young ducks sold steadily through May at twenty cents per pound, and the prospects seem excellent for prices to remain up. Chicago has also had good prices, not quite as high as last year, but holding longer in the season.

ABOLISH THE FEED-TROUGH.

The feed-trough, or, rather, the feed-hopper, that is kept full of food, is the lazy man's method of feeding, and it is not only expensive, because it induces the hens to eat at all hours of the day, but it causes them to fatten and become subject to disease, thus diminishing the supply of eggs. When feeding the hens with grain, let it be scattered wide, which not only prevents the greedy hens from securing more than their share, but compels all to hunt for it, thereby taking exercise and remaining in better condition for laying.

A FEED-TROUGH.

Mr. M. Geissinger, Zionsville, Pa., sends us a design of a feed-trough, which is very simple. He says: "Take an inch board, 12 inches wide, and of the length you wish the trough. Then rip it lengthwise, $\frac{1}{2}$ inch from center; that is, so that you get one half $5\frac{1}{2}$ inches, and the other $6\frac{1}{2}$ inches. Nail them together as a trough,



FEED-TROUGH—FIG. 1.

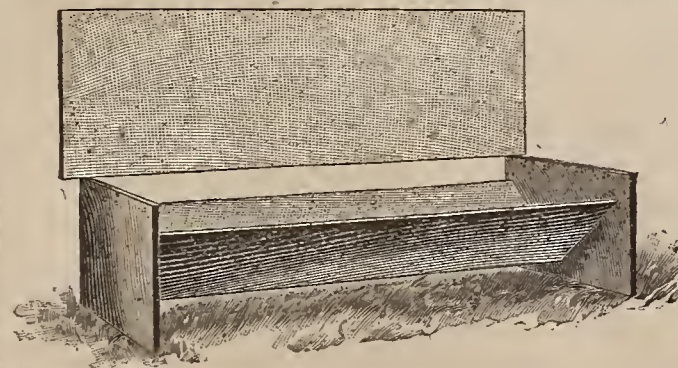
and then make two boards, 11 by 12 inches square, for end pieces. Nail them on so they will reach 3 inches above the trough. Then take another board, 12 inches wide and three or four inches longer than the trough, for the cover, and fasten it to the end pieces by two 3-inch rough iron T hinges (A A, Fig. 1), and you have a first-class chest trough, suitable for indoor or out. Rain will not get in, as the cover is wider than trough. There are only five pieces of boards in the whole, and it is so simple that any farmer with a saw and hatchet can make it."

YOUNG GEES.

The goslings should now be beyond the assistance of the poultryman, and given plenty of room to help themselves in the stubble field. They will in this manner secure all the food they wish, and grow rapidly. They eat nearly all kinds of weeds and grass, and will come up at night well satisfied and well fed. They will need no assistance until two weeks before marketing, when they should have a mess of scalded corn meal morning and night, which will make them very fat.

BUCKWHEAT AND MILLET SEED.

Growing food for poultry is not as profitable as buying it, but there are some crops that may be grown for a variety, such as sunflower seed, buckwheat and millet seed. It is more difficult to grow the



FEED-TROUGH—FIG. 2.

former, as a longer season is required, and the labor necessary is greater, but a patch of buckwheat and millet may be sown now, and as they quickly mature, will provide quite a supply of food that may be fed in winter as a variety. Both crops will do well on light, sandy soil.

WOODEN TROUGH.

Wooden troughs are excellent for holding the drinking water for fowls, but there is one thing to be guarded against, and that is, they will become filthy and slimy. In such cases they should be cleaned with soap and warm water, rinsed and refilled. The drinking water is often contaminated by a diseased fowl, and this endangers the health of the others, but more so when the troughs are unclean. Drinking fountains are not easily cleaned, but they should be well scalded with hot soapsuds occasionally.

FEEDING CHICKS ON THE GROUND.

Fowls should have their food scattered, as picking it from the ground will do them no harm; but food intended for chicks should always be placed in troughs or on boards, in order that their feeding places may be kept clean. This protects against gapes, while the removal of the food left over guards against fermentation. Old food that is partially decomposed is unfit for chicks, and if they are fed on the ground, it is utterly impossible for them to escape disease. In nearly all cases of gapes, it occurs from feeding chicks in filthy places.

EGGS THAT WILL KEEP.

One of the secrets which we again impress on readers is that eggs intended to be stored away for fall or winter use should be from hens not in company with males. The hens will lay just as many eggs when no males are present as with them, and there will be less cost of food to be consumed by non-producers. A fertile egg will spoil in one fourth the time of an infertile egg. One of the surest signs that an egg is fertile is that it quickly becomes stale. We have had infertile eggs to be placed in an incubator, kept therein at a temperature of 103°, and when removed they were but little damaged, some of them being suitable for "bakers." The eggs containing the germs of chicks, if not progressing in incubation, would become spoiled in a week or ten days. If eggs can be kept for three weeks in an incubator at 103°, they will easily keep in a cool place for three months. As so much depends on the kind of eggs to store away, it is not only cheaper, but the results will be much more satisfactory.

GREEN FOOD FOR DUCKS.

If ducks are to be kept in limited areas, they may be fed all kinds of green food. In fact, as the duck is quite a gourmand, it does not restrict itself to any particular diet, and the various weeds may be made to serve a valuable purpose as food for ducks. The well-known pigweed is quite a delicacy with ducks, and purslane, dandelion, all kinds of grass, and even young weeds that would be rejected when matured, will be eaten. It will pay to feed ducks on green food principally. At this season they need but little grain, especially if they are not laying.

DRONES IN THE FLOCK.

It is the drone that increases the expenses and lessens the profit. The fat hen that consumes all she can get, and does not lay, simply obstructs the others and adds to the cost. The pullets that do not grow, though early hatched, will not lay before spring, and will, for awhile, be only drones. The males, whose services are not now required, are drones in the truest sense, and should be gotten rid of. The drones take up space in the poultry-house, they produce nothing, and they add to the cost. Only the profitable members of the flock should be retained.

JUNE AND LICE.

June is the month when lice are active and prolific, and from now until October the poultry-house will need more attention, so far as keeping it clean, than at any other time. Unless the lice are kept out, the hens will not lay. A good drenching of the house with strong soapsuds and kerosene will kill the lice and keep the hens comfortable at night. It is at night that the lice annoy the hens the greatest, depriving them of rest and debilitating them to such a degree that they droop and die.

The Peerless Atlas of the World, the Farm and Fireside one year and the Ladies Home Companion one year, all for only \$1. See our offer on page 315.

INQUIRIES ANSWERED.

Scaly Leg.—L. B. H. "What would be an effective remedy for scaly legs on fowls?"

REPLY:—Anoint once a week with a mixture of a gill of melted lard and a teaspoonful of kerosene.

Bed-Bugs in Poultry-House.—C. E. K., Tacoma, Wash. An inquirer in your paper asks for a remedy for bed-bugs in hen-house. We have used coal tar mixed with coal oil, under the roosts and sides of the walls, and no lice or bugs of any kind will stay.

Soft-shell Eggs.—Mrs. C. L. L., Irvington, N. J. "Some of my hens lay eggs with soft shells, while the eggs from other hens in the same flock have shells that are very hard. I feed all of them alike."

REPLY:—The hens that lay the eggs with soft shells are too fat.

Preserving Eggs.—E. E. E., Redding, Iowa. "Which is the best way to pack eggs for winter market?"

REPLY:—Keep them in a very cool place, on racks, and turn them twice a week. No packing is necessary. Use eggs from hens not in company with males.

Ducks Not Laying.—Mrs. I. Z., St. Matthews, S. C. "My ducks do not lay. I bought a pair last fall and the female has laid only seven eggs. They are Pekins, and have a variety of food, scraps, etc."

REPLY:—The probability is that you have overfed them and gotten them in too fat a condition.

Moistening Eggs During Incubation.—W. B. B. T., Pasadena, Cal. "Would you advise moistening eggs of hens, ducks or turkeys that are being incubated, and if so, how often?"

REPLY:—In very dry weather it may be of advantage a day or two before they are to hatch; but otherwise it is better not to attempt assistance of the kind.

Canary.—Mrs. D. N. Z. "What is the matter with my canary? He used to sing constantly, but has not sang for eighteen months. He is six years old, eats heartily, and seems perfectly well. I can discover no lice on him, but he seems to moult some every month or two."

REPLY:—When moulting, the bird is not in a healthy condition. Frequent moulting is caused by food being too oily. The age of the bird may also affect it.

Feeding Chicks and Ducklings.—H. R. J., Castleton, Md. 1. "What is the best feed for young chicks until they are six weeks old? 2. What should they have after they are that age? I feed mine corn bread and sweet milk. 3. Should young Pekin ducks have the same food as other young ducks? 4. What is the best cure for gapes?"

REPLY:—1. Give stale bread, oatmeal, bread and milk until they will eat wheat, then feed a variety of any food. 2. Whatever they will eat; corn bread and milk is excellent, but the greater the variety the better. 3. Yes. 4. A drop of turpentine on a bread crumb, twice a day. Sprinkle the yard with lime.



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Queries.

READ THIS NOTICE.

Questions from regular subscribers of FARM AND FIRESIDE, and relating to matters of general interest, will be answered in these columns free of charge. Querists desiring immediate replies, or asking information upon matters of personal interest only, should enclose stamps for return postage. The full name and post-office address of the inquirer should accompany each query, in order that we may answer by mail if necessary. Queries must be received at least two weeks before the date of the issue in which the answer is expected. Queries should not be written on paper containing matters of business, and should be written on one side of the paper only.

Asparagus Bed.—C. M. G., Boonville, Mo. See reply to Mrs. W. P. H., under "Planting Asparagus."

The Cabbage-Worm.—J. R. Pelee Island, Ont. The subject is treated under "Garden and Field Notes," elsewhere in this issue.

Fence Machine.—F. I. S., Ushers, N. Y. You can get a loom for making picket fence from the Hoosier Drill Co., Richmond, Ind.

Cheese Making at Home.—G. H. W., Montague, Mich. Send 25 cents to J. H. Monrad, Winnetka, Ill., for his book, "A. B. C. of Cheese Making."

American Bee Journal.—C. S. W., Yankton, S. Dak. The *American Bee Journal* is published by Thomas G. Newman & Son, 246 E. Main street, Chicago, Ill.

Wood-working Machinery.—S. C. P., Farmington, N. M. You can get wood-working machinery from the Seneca Falls Manufacturing Co., Seneca Falls, N. Y.

Egg-Plant Culture.—L. H. B., Bingham, Ohio, asks for information on growing egg-plants.

REPLY BY JOSEPH:—Set the plants in warm and rich soil, and otherwise treat like peppers. If you can keep them free from potato-bugs, and the season is long and warm enough, you will then have no trouble in raising a satisfactory crop.

Successive Cabbage Crops.—S. B., White Rock, Nev., asks whether it would be advisable to plant cabbages on the same ground twice in succession.

REPLY BY JOSEPH:—No, it would not, under average circumstances, as the plants, if this is done, are very apt to be affected by club root. Plant on new soil. This is a good rule for almost any crop, especially for cabbages. Not only this, but we would not plant this crop after any other of the same family, like turnip, kale, kohlrabi, etc. Successive planting may, however, sometimes be practiced in old gardens and in calcareous soils with impunity. For lice on cabbages, use the kerosene emulsion or tobacco tea.

Concrete Building for Dairy and Ice House—Signs of the Moon.—A. D. R., Wasco, Oregon, asks: "Will a concrete building answer for the following purposes: Water-tank in one end, milk-house in center, and ice-house in the other end? What roof will be most suitable for same building?—Is there anything in planting by the signs of the moon, or in weanling calves and colts by the sign?"

REPLY:—Yes, if properly constructed. The ice-house must be double walled, and have a dead-air space between the outer and inner walls. It must be provided with good drainage, so arranged that no air can get to the bottom of the ice, and also with good ventilation above. A good shingle roof will answer. Nothing.

Root-House.—J. E. M., East Portland, Oregon, writes: "Please give plan of making cellar or root-house above ground for small family use. I would like as convenient and cheap a plan as possible, so as to be durable and of good service. Our climate is quite mild, so that it need not be made as for a colder climate."

REPLY:—On a well-drained spot, convenient to your kitchen, erect a frame building of ample size for your needs. Let the walls be made with double dead-air spaces by the use of building paper. Provide for good ventilation. Since there is little danger of frost in such a building in your climate, the floor can be made of concrete. The ceiling or roof should be made with dead-air spaces like the walls.

The Ground Cherry.—M. C. M., Buffalo Lick, Ark., wants to know how to cultivate the strawberry tomato, or ground cherry (alkekengi).

REPLY BY JOSEPH:—It hardly needs cultivation, although it may be started and managed in the same way as any other tomato variety. Get a packet of seed (it is catalogued, for instance, by J. J. H. Gregory, of Marblehead, Mass.) and sow it either in frame, or right in the field where wanted, and it will grow and bear fruit. As the ripe fruit drops off, like mature tree fruit, seeds are very liable to find their way abundantly into the soil, and they will produce lots of chance plants for another season; so you will have strawberry tomatoes year after year, if you give the plants half a chance.

Planting Onions in the Fall.—E. M. L., Kirkwood, S. Dak., writes: "Onions are so slow to come up in the spring, why would it not do to plant them in the fall?"

REPLY BY JOSEPH:—Onion seed may be sown in the fall, where the winters are not too severe, and perhaps even in colder latitudes, if somewhat protected during the winter. But even if the plants were carried safely through until spring, many of them, instead of forming nice bulbs, would take a notion to go to seed. A better way would be the one I am now practicing; namely, to start the plants in cold-frames and transplant in rows twelve to fifteen inches apart, having the plants four or five inches apart in the rows. This method is original with me, and entirely satisfactory. The details of operation, cost, yields and profit will be reported later on. I deem this method one of the most important of the recent discoveries in the field of horticulture.

Planting Asparagus.—Mrs. W. B. H., of Fishkill Village, N. Y., writes: "Am anxious to learn the most approved methods of setting out an asparagus bed, when to set plants and what varieties to select. Have tried several times with poor results, and feel that an appeal to FARM AND FIRESIDE will set me right on this question, as it has on many others."

REPLY BY JOSEPH:—The plants are usually set in early spring, although they may, with equal success, be set out in autumn. Get strong plants of Conover's Colossal, the only variety now generally grown. Barr's or Philadelphia Mammoth, Palmetto and some others are promising and highly spoken of by those who have tried them; but I fancy they will not materially differ in yield and value from the older Conover's Colossal, besides being yet too high-priced for general use. Two-year-old plants should be very large; otherwise, I would give strong one-year plants the prefer-

ence. Select warm, well-drained soil of at least medium fertility, and prepare it in early spring as carefully as you would for corn. Mark out furrows from six to eight inches deep, four or five feet apart, and carefully set the plants two feet apart in these furrows, covering lightly with soil. Then put on a few inches of fine compost. In the course of the required tillage, by means of the horse-hoe, gradually fill the trenches even with the surrounding soil. Apply more compost the following fall or spring. It seems to me the whole procedure is so simple that there need be no failure or unsatisfactory results, so long as good, strong, fresh plants are set, and these can be had quite cheaply of all nurserymen and seedsmen. The second season you may cut a part of the young shoots—the fewer the better for the plantation. If the shoots are desired in the bleached condition (which is my preference), each row must be hilled up or ridged in early spring and leveled off in the fall.

VETERINARY.

Conducted by Dr. H. J. Detmers. Veterinarian of the Ohio Agricultural Experiment Station, and Professor of Veterinary Surgery in Ohio State University.

To regular subscribers of FARM AND FIRESIDE, answers will be given through these columns free of charge. Where an immediate reply by mail is desired, the applicant should enclose a fee of one dollar, otherwise no attention will be paid to such a request. Inquiries should always contain the writer's full address. Queries must be received at least two weeks before the date of the issue in which the answer is expected. Subscribers may send their veterinary queries directly to Dr. H. J. DETMERS, 35 King Avenue, Columbus, Ohio.

Garget.—H. M. M., Van Wert, Ohio. The cause of cows giving curdy milk is a coagulation of the casein, and the remedy consists in frequent, thorough and persistent milking, until the last coagulated particle of casein has been removed (been milked out).

Probably Some Throat Trouble.—L. C. N., Glenwood, N. Y., writes: "What is the trouble with my cow? When she holds her head down, her food will come out of her nose. She is in good condition and eats well."

ANSWER:—There are probably some morbid changes in the throat, or, more particularly, in the pharyngeal region, but now I cannot tell you unless you give a more detailed description. I advise you to have the animal examined by a competent veterinarian.

A Bad Cough.—A. L. S., Quincy, Fla., writes: "My young mare had the distemper about four months ago and came near dying. Since she got better she has had a bad cough. What will cure the cough and fatten her up? She is able to work now, and eats heartily."

ANSWER:—It seems some chronic inflammation is yet existing in the respiratory passages—probably in the larynx and the trachea. More I cannot tell you, unless you acquaint me with the result of a thorough examination. I, therefore, hesitate to prescribe. One thing, however, is certain: You cannot expect your animal to recover unless you exempt the same from work.

Sore Eyes.—S. B. C., Brewster, Kan. You will do best to have the eyes examined and treated by a competent veterinarian. It is always a precarious thing to prescribe for such cases from a distance, especially if description furnished is meagre and inaccurate. If the eye disease of your mare is merely catarrhal ophthalmia, an eye-water composed of nitrate of silver, two grains, and distilled water, one ounce, often does good service, provided, of course, the morbid process is not too inveterate. This eye-water is best applied three or four times a day by means of rubber-topped, glass pipette. The druggist will explain to you how it is done. If the eyeball or the interior of the eye is degenerated, a cure cannot be expected.

Has Been Lame a Year.—T. J. P., Taylor's Bridge, N. C., writes: "I have a two-year-old colt which has been lame in her left hind leg about one year. When she walks, you can scarcely detect it; when she trots, she limps very little, but when she runs, she often goes on three feet. I do not know whether the lameness is in her hip or not."

ANSWER:—You say you don't know whether the lameness is in the hip or not; neither do I. You have had the lame animal before you for a year, and I never have seen it. How, then, can you expect me to tell you where the lameness is, and not even deem it necessary to give a good description? I advise you to have the animal examined by a veterinarian.

Sweeny.—M. M. H., Rimersburg, Pa., writes: "I have a three-year-old mare that I put to work in the plow. After I had worked her about one week I noticed that she dragged her left fore foot; I stopped working her. In a few days she commenced to sweeny back of where the collar works. She is a little lame in that leg or foot."

ANSWER:—What you complain of was, very likely, caused by a collar that did not fit, and allowed the burden to shift upon one shoulder. If such is the case, rest and good, nutritious food for six or eight months will effect a cure. If the character of the ailment is not what I suppose it to be, you will do best to have the animal examined and treated by a competent veterinarian.

Looks Like Swine Plague.—S. M. W., Jackson, Neb., writes: "What ails my young pigs? They first refuse to eat. Their mouths get sore and the lower jaw bone rots out. They seem to be all right as long as they run with their mother, but as soon as they are weaned they begin to ail. We feed good milk with cooked meal and potatoes."

ANSWER:—The case you describe looks like swine plague. Were your pigs ringed when weaned? If not, too much tissue is destroyed, and if the animals are not otherwise too sick, so as to make recovery impossible, some good may be accomplished by washing the sores twice a day with a four or five per cent solution of carbolic acid, and by keeping the animals in dry, clean quarters.

A Complicated Case—Thumps.—N. J. M., Scottsboro, Ala., writes: "I have a mule that seems to have the spavin and is weak in the loins. It has on the inside of its hocks soft lumps like windgalls. I also have a mare that has the thumps. She never had them until about foaling."

ANSWER:—If your mule is afflicted as it "seems" to you, it is a complication, and, very likely, a hopeless case. As to your second question, I cannot make out from your inquiry what you mean by thumps. Better have the animal examined by a veterinarian. It is utterly impossible to diagnose such cases from a distance, unless a very intelligent description of the symptoms is given. You, like many others, vastly overestimate my ability, and seem to think that I am a kind of prophet. Unfortunately, I am not.

Teat Closing.—J. M., Florence, Mich., writes: "What can be done for a cow that has always been a very easy milker until her last calf? She milked easily for awhile, but for some time the passage through which the milk flows seems to close up so at the end of her teat. It is hard to force the milk out; the bag does not appear to be sore."

ANSWER:—Frequent, thorough and vigorous milking constitutes the best remedy. Milking tubes, unless applied with great care and all antiseptic precautions, do, as a rule, more harm than good.

Actinomycosis.—Z. M., Rockport, Mass., writes: "I have a cow with a bunch on her jaw the size of a hen's egg. It has been growing about a month. I am putting on raw petroleum and camphor. Is there anything better I can do for it?"

ANSWER:—Questions like yours have been repeatedly answered in these columns. If you desire more information than can be, or has been, given in these brief answers, you may write to Chas. E. Thorne, director of the Ohio Agricultural Experiment Station, Columbus, Ohio, and ask him to send you the March bulletin of the station (volume 3, No. 3), which contains an article on actinomycosis. Your treatment, like many others that irritate but do not destroy the tumor, is far worse than none.

Windsucker.—A. B. D., Wichita, Kan. There is no cure. A strap buckled tight will prevent it for the time being, but, of course, it discommodates the horse, and may even cause a disorder in the circulation of the blood in the jugular veins. A great many devices have been invented, but so far all have failed, more or less, and some have been found to be exceedingly cruel and even dangerous. If your horse is a real windsucker, that is, one that does not need any support when exercising its bad habit, nothing can be done. If he is a cribber or one that requires some support or rest, you may put him in a loose box, out of which manger and feed-box have been removed, and feed him out of a box which is suspended by a spring, and removed immediately after eating, or may cover the borders of feed-box with sheepskin with the wool on.

Edematous Swelling.—A. W. G., Coshoc-ton, Ohio, writes: "The first time my mare was bred she swelled along under the belly just before foaling. The second time she was bred she swelled worse than the first time. The third time she is broken down under the belly, and is all out of shape. She is sunk across the loins, and there is quite a roll in front of the udder."

ANSWER:—Such edematous swellings are quite frequent in brood mares a short time before foaling, especially if the mares are kept on innutritious or watery food, have insufficient exercise and are poorly groomed. Hence, the remedy suggests itself. It consists in suitable (not too voluminous and watery, but sufficiently concentrated) food, sufficient (voluntary) exercise, cleanliness and thorough grooming every day, particularly on the lower surface of the body, between the legs, etc. If no mistake whatever has been made in the treatment or keeping of your mare, so that nothing but an excessively lax or lymphatic condition of the animal can be assigned as a cause, I would not recommend to breed her again.

Arthritis.—R. W. K., Winfield, Kan., writes: "Our colt was all right except that its legs were extremely long and crooked. Its height was forty-four inches when it was three days old, but when it was three weeks old it began to limp and we thought it possible the mare had accidentally hurt it, but its front right leg began to swell and finally became so large we decided it would break. We called in a veterinarian and he said it was a strain, and for us to add salt and vinegar to the Jack-sou's 'Common Sense' liniment we were using. It finally became so bad I lanced it, and now it has begun to improve nicely, but the left hind leg was swollen a little, so I used the liniment alone on it and it broke last evening. Now it has another big swelling on its right hind leg inside the knee. It only appeared last night and is as large as a small coconut."

ANSWER:—You describe a case of (pyæmic) arthritis. The swellings, when becoming fluctuating and presenting unmistakable signs that an abscess has been formed, must be opened at the proper place and the right time, and then must receive strict antiseptic treatment. As long as the young animal is lively and has good appetite, and as long as no degeneration of the joints or of the bones have taken place, a recovery is possible. The treatment of this disease, especially if it has come to abscess formation, should, under all circumstances, be entrusted to no one but a competent veterinarian. If the mare is very plethoric and very fleshy, or gives more milk than is good for the colt, it will be necessary to keep her on a lighter diet, and, perhaps, to give her a physic.

Puerperal Fever.—C. P., Nehalem, Oreg., writes: "On the eighth of May one of my cows came in with calf, doing well. May 11th she went to pasture in the morning, seemingly well. At 4:30 P. M. I found her down, not lying naturally, but apparently collapsed and perfectly helpless. She could move nothing but her head. She was not bloated. Her legs were cold and she was gasping for breath and evidently suffering acute pain. At 8 P. M. she died. Nothing passed from her bowels after she was down, though urine ran from her without effort. What ailed her and what should I have done?"

ANSWER:—Your cow died of puerperal fever or parturient apoplexy, as some erroneously call it. The disease is caused by septic bacteria, absorbed and introduced into the organism through the more or less lacerated walls of the uterus after delivery. As predisposing causes may be considered plethoria and great milking qualities. Hence, a light diet during the last three or four weeks before, and the first two or three weeks after parturition, and keeping the stable clean and dry, are considered effective means of prevention. If it is done in time—that is, as soon as the first symptoms make their appearance—an injection into the uterus of a quart or more of a blood-warm solution of corrosive sublimate in water (1:1500) frequently arrests the further development of the morbid process, because it will destroy all the bacteria not yet absorbed. Any other treatment, unless it be a symptomatic one—directed against dangerous symptoms—is of no avail. It is essential, though, to keep the patients in a good, dry, warm, quiet and comfortable place, where nothing irritates them. It is also advisable, whenever there is reason to suppose that the disease may make its appearance, to leave the calf with the cow at least a week or ten days, and if the secretion of the milk is arrested, and the calf does not attend to the milking, the diseased cow should be milked at least once every hour, so as to excite the mammary glands to activity. If the surface of the body appears to be cold to the touch, the sick animal may be covered with blankets.

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Our Miscellany.

HAPPINESS.

Know, all the good that individuals find,
Or God or Nature meant to mere mankind,
Reason's whole pleasure, all joys of sense,
Lie in three words, Health, Peace, and Com-
petence,
But Health consists with temperance alone;
And Peace, O Virtue! Peace is all thine own.
The good or bad the gifts of fortune gain;
But these less taste them as they worse obtain.
—Alexander Pope.

THERE are 60,000 families in London living in cellars.

THIS country has just half the railroads of the world.

A DISH of charcoal placed in a larder where meat, milk, etc., are kept, will help to keep them sweet.

For Threshers, Engines, Saw Mills and Clover Hullers examine the "Aultman-Taylor" advertisement in this paper. It contains the "Starved Rooster" cut.

VOTE and work for the right man in office; subscribe, and induce others to subscribe for the right papers; and injustice to the farmers will find no foothold in America.

FATHER MULLER, of the Jesuits' college, Bangalore, India, claims that he has cured several cases of leprosy by a system of electro-homoeopathy, at the small cost of 10 rupees in each case.

KEEP a little camphor at hand these hot days, and if the head becomes uncomfortably warm, bathe it with a teaspoonful in two ounces of water. This drives back the blood, and averts sunstroke.

"I THINK ice cream is delicious, George," she said, "I just love it." "But don't you know that it is very dangerous?" inquired George, uneasily. "Yes, I suppose it is dangerous, but I'm no coward, George."

IN the matter of woods, oak has precedence, cherry follows next, birch and curly maple give a pleasing, airy, dainty effect to a room, and walnut, which has been out of date, is coming into favor again.

PEOPLE are yet laughing at a doctor in a little village in this state who, in filling out a certificate of death, inadvertently wrote his name in the blank space reserved for "cause of death."—Philadelphia Press.

JULIET CARSON has the chair of cooking and household economy in Rutgers Female College. The college girls say she carries her kitchen in her bonnet, and can make a soup with a watercress and a match.

ENGLAND is not only investing three dollars in the United States to one in Canada, Australia or India, but would be glad to make it five. It's a safe country for investors, developing and growing every year, and we neither have war nor talk of war to jeopardize investments. The foreigner who invests his dollars here can make no mistake.

PRACTICE and theory must go together. Theory without practice to test it, to verify it, to correct it, is idle speculation; but practice without theory to animate it is mere mechanism. In every art and business theory is the soul and practice the body. The soul, without the body in which to dwell, is, indeed, only a ghost; but the body, without a soul, is only a corpse.—New York Ledger.

THE travelers' tree, a native of Madagascar, is a species of palm with long leaves, used by the natives to cover their huts. The peculiarity of this tree is the shape of the leaves, which forms a sort of receptacle near the stalk, where water is held in a pure state for at least a month. This water settles in the base of the tree, and travelers, knowing this, eagerly tap for it when they cannot find any springs.

COMPARISONS are odious, as every one must have heard again and again, but thoughtless people will persist in making them. A young doctor, wishing to make an impression upon a German farmer, mentioned the fact that he had received a double education, as it were. He had studied homoeopathy, and was also a graduate of a "regular" medical school. "Oh, dot vas uoding," said the farmer; "I had voice a calf vot sucked two cows, and he made noding but a common schteer, after all."—American Medical Journal.

CLAUS SPRECKELS and a number of capitalists have been looking over Florida with a view to starting an extensive industry, and an immense tract of land has been reserved for Mr. Spreckels. Sugar cane in our state grows more rapidly and yields twice as much as in Louisiana. That has been proven by a number of experiments. The soil and climate are similar to those in the sugar-growing districts of Cuba. Over 3,500,000 acres have been reclaimed, and upon a portion of it sugar has been grown for four years. All of the leading experts say the land is adapted to sugar culture. Mr. Spreckels was at Philadelphia, and directly south of that place there are 12,000,000 acres which can be put to good use. If the deal be concluded, the largest sugar plantation in this country will be established on these reclaimed lands below Philadelphia.—Fla. Ex.

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Size, 12 by 15 Inches.

Frame, 21½ by 24½ Inches, of 5-Inch Molding,

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Always looking for something that will benefit our subscribers, we have completed arrangements for making Enlarged Portraits—either Photographs or Crayons—and offer our readers the benefit of extremely low prices only obtained by us.

When you accept either of the following offers, you must send your photograph or likeness, or that of the person of whom you want the enlarged portrait.

The Portraits are made from any size photograph, tintype, daguerreotype, ambrotype, or any kind of picture that gives a clear and distinct likeness. When possible, cabinet size photographs should be sent in preference to other styles, as they give the best results. The original picture will be returned with the enlarged copy, uninjured.

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The artists making these Portraits have sent out thousands of this style, giving great satisfaction. It is always a correct copy of the photograph sent us, and as good a portrait and frame as is usually furnished for \$5.00 to \$6.00. The elegant and stylish gilt frame is a new pattern, of 5-inch molding, its beauty enhanced by a ¾-inch strip of maroon plush, near the inner rim, with gilt on both sides of the plush. Dealers sell this style frame alone for \$2.50 to \$3.50. The picture, with glass and cord, ready for putting up in your parlor, is securely boxed and sent by express, the receiver to pay express charges, which will be light.

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This picture is the same style and size (12 by 15 inches) as above Premium No. 544, but without the frame.

Given free as a premium to any one sending 5 yearly subscribers to this paper, at 50 cents each.

Price, including one year's subscription to this paper, \$1.50.

We offer it for sale for \$1.25.

This picture, without the frame, is sent by mail, postage paid by us.

When mailing the photograph or likeness from which the portrait is to be copied, be sure that it is well protected, by putting it between two pieces of heavy cardboard before inclosing in envelope, and put on a 2-cent stamp for each ounce or fraction of an ounce, and do not fail to give your complete address, with name of express station if it is different from your post-office.

Present subscribers accepting either of the above offers will have their subscription extended one year from the present date on yellow label. Order by the Premium Number, and address all orders to

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NIGHT TERRORS IN CHILDREN.

Many adults know from their own experience how distressing actual terror is. A perilous exposure has, perhaps, called it out so strongly that the very remembrance of the adventure is exceedingly painful. Some men have been completely prostrated by the feeling. Not a few sufferers from cerebral disease have been tormented with terrors only less horrible than those experienced by the victim of *delirium tremens*. It is well known that a night of terror has not unfrequently blanched a stalwart sufferer's hair to absolute whiteness. Many a sudden death has been due to sudden fright. Now, night terror is not uncommon among children, and their sufferings from it are quite as real, and perhaps quite as great, as those of the grown men and women to whom we have referred, and the practice of dealing harshly with them because of the unreasonableness of the fear, and sometimes even of punishing them with a view to breaking up the habit, or with the thought of expelling a fancied trouble by a real one, cannot be too strongly condemned. Every one should remember that it is of the very nature of terror, whether the cause be real or fancied, to unnerve its victim. Says the *Medical and Surgical Reporter*:

"Whoever has experienced these terrors in his own person, or studied them in his own children, must feel deeply that they are a very serious affliction, and call for the greatest amount of wise and kindly sympathy, and the most discreet management. In most cases, they are associated with some chronic or temporary ailment. Indigestion, a catarrhal condition of the air passages, which interferes with respiration, swelling of the tonsils, or of the substance of the walls of the air passages, and congestion of the membranes of the brain, constipation, or an over-filled bladder are among the causes which give rise to night terrors. In treating them, of course, it is necessary, first of all, to ascertain, if possible, the presence of such exciting causes, and to remove them." A bright light in the room is often exceedingly helpful, as thus the real, through the medium of sight, crowds out the imaginary. How often even strong-minded men find a similar relief from imaginary fears! Sometimes an assuring word from one whom the child fully trusts, with her presence for awhile in the room, may be sufficient to allay his fears and soothe him to quiet slumber. Sometimes his mind may be relieved by diverting it, as the *Reporter* suggests, by producing his toys, or games, or picture-books, or by playing on a musical instrument.—*Youth's Companion*.

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Size, 18 by 22 Inches.

Frame, 32 by 36 Inches, of 8-inch Molding.

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The Handsome Frame is a combination Gilt and Steel, all artistically ornamented. Its beauty can only be appreciated by those who see it. It is made of 8-inch molding, and is 32 by 36 inches in size. Most dealers sell frames of same value for more than we ask for frame and picture complete, together with our paper.

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It is securely packed, and must be sent by express, the receiver to pay express charges on about seven pounds. Eastern subscribers will be supplied from Philadelphia, Pa.; Western subscribers from Springfield, Ohio. Name your Express Office if it is different from your Post-Office address. Send all orders to

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ELDON, IOWA, April 11, 1890.

I received the grand picture, "Christ Before Pilate," and am more than pleased with it. I think it truly a grand picture. I would not part with it under any consideration if I could not obtain another. MRS. E. J. SHAFFER.

McFERRAN, COL., April 15, 1890.

The Peerless Atlas that I sent for came all right, and to say I was delighted would not begin to express it. I was really surprised. How you can afford to give so much for so little surpasses my comprehension. Would not be without it for ten times its cost.

A. L. AMEND.

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Smiles.

THE MAN WHO HEARD IT BEFORE.

You tell him a joke you relied on as new;
He smiles in a wearisome way,
From a comedy new you recite him a bit,
He says he saw that at the play.
You give him a story that never yet failed
To set all who heard in a roar;
He nods half approval and turns him away,
And murmurs, "I've heard it before."

The girl whom you woo in your tenderest tone,
Whose heart you are seeking to gain,
Listens coldly to all you may have to protest,
Seeming only to wish you'd refrain.
You seek for some phrase not totally trite,
And e'en the thesaurus explore.
It's all of no use and you bid her good-by—
You see she has heard it before.

How sad it must be to go onward like this,
With nothing on earth to enjoy
And never make any one happy yourself
And only find things to annoy.
His life like an orange whose juices are gone,
'Tis a dry, empty shell, and no more;
Alas, he is much to be pitied, not blamed—
The man who has heard it before.

—Washington Post.

RIGID ECONOMY.

HERE is a good story told of the economical qualities of two well-known and wealthy gentlemen living in the east part of town that is a good lesson for those recklessly extravagant persons who are not possessed of the true spirit of economy. On a certain night, one of these gentlemen called on the other to transact a little business at the former's residence. The host lighted a candle that they might examine some papers, but immediately blew it out again when they were through, leaving both sitting in the dark.

"Why did you blow out the candle?" asked the caller.
"Oh, we can talk in the dark as well as in the light, and it saves the candle," was the reply.

They continued their conversation for a short time, when the host heard some mysterious sounds coming from the direction of the caller's chair, and inquired what his friend was doing.

"Why," said his friend, "it's dark in here, and no one can see me, so I thought I would take off my trousers to save the wear on them."—*St. Joseph Herald.*

HER SPARE ROOM.

"It ain't ev'rybody I'd put to sleep in this room," said old Mrs. Jinks to the fastidious and extremely nervous young minister who was spending the night in B., at her house.

"This room is full of sacred associations to me," she went on; "my first husband died in that bed with his head on these very pillars, and poor Mr. Jinks died settin' right in that corner. Sometimes when I come into the room in the dark, I think I see him settin' there still. My own father died laying right on that lounge under the winder. Poor pa! He was a Spiritualist, and he allus said he'd appear in this room after he died, and sometimes I'm foolish enough to look for him. If you should see anything of him to-night, you'd better not tell me; for it'd be a sign to me that there was something in Spiritualism, and I'd hate to think that. My son by my first man fell dead of heart disease right where you stand. He was a doctor, and there's two whole skeletons in that closet that belonged to him; and half a dozen skulls in that lower drawer. Well, good-night, and pleasant dreams."—*The Occasional.*

SOMEWHAT OF A LIAR.

"The soil over on Meadow creek," remarked an old ranchman, the other day, as he wiped his whiskers, "is so rich that vegetables will grow while you wait."

"That's nothing," put in the Pony liar. "On my ranch over near Harrison we can't allow the horses to stand a moment in the fields for fear their hoofs will take root and the animals grow up to be elephants. I made a three-legged stool the other day, out of fresh-cut saplings, and stood it in the barn-yard. The next morning I found in its place a black walnut extension table. If I hadn't sawed the legs off close to the ground I might had a whole suit in a day or two."

Exit Meadow creek man—*Bozeman (Mont.) Chronicle.*

CLEANING LITERATURE.

"The clean literature movement seems to progress."

"Yes; I see a prominent soap man gives away a book with every bar he sells—just to show, I suppose, what his soap can do."—*Life.*

CONSUMPTION SURELY CURED.

To THE EDITOR:—Please inform your readers that I have a positive remedy for Consumption. By its timely use thousands of hopeless cases have been permanently cured. I shall be glad to send two bottles of my remedy FREE to any of your readers who have Consumption if they will send me their Express and P. O. Address.
Resp'y T. A. SLOCUM, M. C., 181 Pearl St., N. Y.

GOT USED TO IT.

"Can I use your telephone a minute?" she asked, as she ran into a neighbor's on Second avenue with a shawl over her head.

"Oh, certainly."
"I'm going to give a party next week, and I want to invite a few friends."

"Yes."
"It is to be a very select party."

"Yes."
"Only my friends."

"Yes."
"And, therefore, you—you won't be—"

"Angry if I am not invited, nor won't consider you cheeky if you use my telephone to invite others? Oh, no." Any one who keeps a telephone in the house for use of the neighbors soon gets used to anything. Why, a man came in here the other day and used the line to call my husband up down town and duu him for a bill. Go ahead and call up the sub office."

THE IDEAL AND THE REAL.

'Twas in the afterglow. The spring day had closed over so gently with the sun sinking in the west (the same old place), and nature was waiting patiently for night to overtake it. Algeron and Angelina were looking up a house in which to erect their Lares and Penates and begin the ever-peaceful, ever-joyous life of housekeeping, etc.

"Shall we take a flat with six rooms and a place to slide the ashes into the cellar?" asked he.

"Oh, dear, no. Let us have a cottage with three hay windows and a beautiful veranda where we can sit and watch the sun go down."

"It would be nice. But what's the matter with taking the first ten-dollar rent we strike?"

'Tis ever thus. Poetry descends to prose the moment the pocket-book is touched.—*Hartford Post.*

A LEGAL FEE.

"I have stolen a coat," said a man to a lawyer, and I want you to defend me. Think you can prove me innocent?"

"Oh, yes; we can prove that you were a hundred miles away when the coat was stolen, and that the prosecution is malicious."

"How much will you charge?"

"What sort of a coat is it?"

"First rate—never been worn."

"Well, I won't charge you anything—just give me the coat."—*London Tid-Bits.*

TO SUIT ALL CUSTOMERS.

Female agent—"I am taking orders for cheerful mottoes for the home, madam."

Woman (sharply)—"I don't want none of your cheerful mottoes."

Female agent—"Then perhaps you would like to look at some of my choice gloomy mottoes. I have some of the most depressing and melancholy designs ever shown."

HARDLY EVER.

An English officer in India was seized by a tiger while smoking a cigar. As the beast was carrying him off he touched his lighted cigar to its side, and presto! change! he was dropped like a hot potato, and got up and returned to his friends. Country exchanges please copy, and add whatever seems meet under the circumstances.—*Detroit Free Press.*

HIS SUPERIOR QUALIFICATIONS.

Applicant—"I feel that I am called upon to serve my country in her need, and therefore desire a situation in the weather bureau."

Signal Service Officer—"What are your qualifications, sir, for the post?"

Applicant—"A willing disposition, and—"

"And what, sir?"

"A prophetic corn!"

LITTLE BITS.

You give me a pane—said the window-frame to the glazier.

The cat has nine lives, which shows that nature had a pretty fair-idea of what the cat would have to go through.

"Purple sunrise," Algy, is probably a phrase invented by some poet who mingled the memories of the evening he painted red with the dawn of his blue awakening.

An old baldhead, who is likewise an old bachelor as well as an old scoundrel, speaks of women as resembling gratifying news. They are good; some of them too good to be true.

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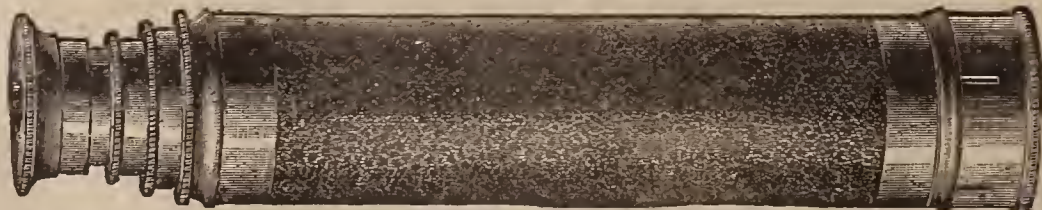
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COLORADO.—(Fort Collins) Bulletin No. 11, April, 1890. Sugar beets.

KENTUCKY.—(Lexington) Bulletin No. 26, April, 1890. Corn experiments (with fertilizers). Bulletin No. 27, April, 1890. Experiments with commercial fertilizers in hemp.

GEORGIA.—(Experiment P. O.) Bulletin No. 7, April, 1890. Analysis of food stuffs. Meteorology. Destructive leaf-hopper.

MASSACHUSETTS.—(Hatch Station, Amherst) Bulletin No. 9, May, 1890. Soil tests with fertilizers. Special bulletin, May, 1890. Translation of paper "On the most profitable use of commercial manures," by Dr. Paul Wagner, director of the Agricultural Experiment Station, Darmstadt, Germany.

MICHIGAN.—(Agricultural College P. O.) Bulletin No. 59, April, 1890. Fruit list and apple scab. Bulletin No. 60, April, 1890. Pigs—breed tests. Potatoes—variety tests. Bulletin No. 61, April, 1890. Foul brood. Bulletin No. 62, May, 1890. The English sparrow.

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RHODE ISLAND.—(Kingston) Second annual report.

TENNESSEE.—(Knoxville) January, 1890. Experiments in growing potatoes.

TEXAS.—(College Station) Bulletin No. 7, November, 1889. Cotton-root rot. Bulletin No. 8, December, 1889. Work in horticulture. Second annual report for 1889.

UNITED STATES DEPARTMENT OF AGRICULTURE.—(Washington) Experiment Station Record, No. 2.

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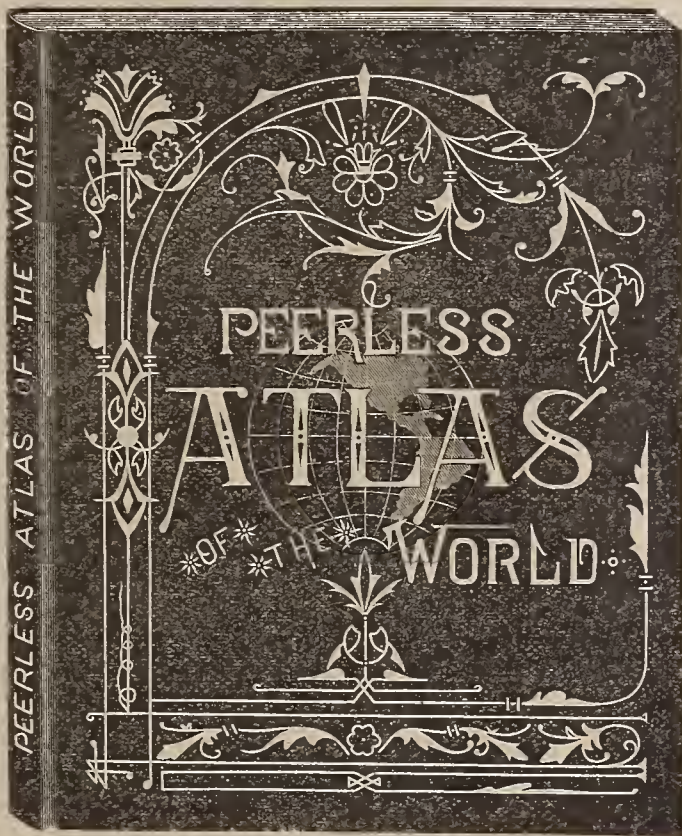
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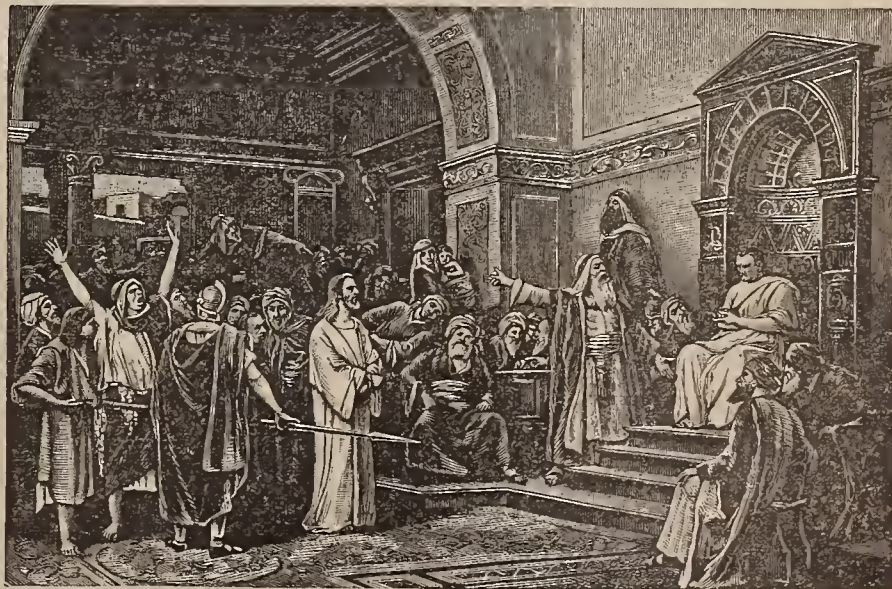
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